POPULATION PROBLEMS AND PROSPECTS IN THE NON-ARAB COUNTRIES OF THE MIDDLE EAST

Edited by

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AFGHANISTAN: PIVOT POINT OF ASIA*

A. S. David, Ph.D., M.S.P.H. and W. J. Serow, M.Sc.

A COUNTRY OVERVIEW

Physical characteristics

Afghanistan is a landlocked kingdom located in southwest central Asia. The country is approximately equal to the state of Texas in size, having an area of about 260,000 square miles. It is surrounded by the Soviet Union to the north, Iran to the west, China to the extreme northeast and Pakistan to the east and south.[1] The length from east to west is 770 miles, including a long narrow extension, Wakhan, which borders Sinkiang in China; from north to south, the maximum width is some 350 miles.**

Rugged mountains run through the country from the west central to the easternmost parts and along the northeastern corridor. To the north, plains merge with those of Soviet Turkestan; to the west, plateaus and deserts merge with those of Iran. In effect, therefore, the country is divided into three distinct regions--the northern plains, the southwestern plateaus and the central highlands.

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*Although this chapter attempts to follow the chapter outline provided by the editor, one should bear in mind that most of the data on Afghanistan are either lacking or of very poor quality. What is given here are the best data available on the subject, in our judgment.

**Dupree says that these figures should be 900 and 550 miles, respectively.[2]

North of the mountains, the plains run gradually to the Amu Darya (Oxus) River, which forms much of the border with the Soviet Union. The land in this region is naturally fertile, but depends on irrigation to make it productive. The Kunduz Valley in the eastern portion of this area is becoming an important center for growing sugar beets and cotton. To the west are rich pasture lands where most of Afghanistan's sheep are raised.

Arid desert land, steppes covered with sand dunes and dry stream and lake beds are characteristic of the southwestern plateau. The extreme northeastern part of the region is somewhat more fertile; many orchards and vineyards are located here.

The central highlands are formed by the Hindu Kush and lesser ranges of mountains which run east to west for some 600 miles, covering about 160,000 square miles. In the eastern portion some of the ridges are heavily wooded with cedar, pine and larch. The sparse grass covering in the west is sought out by nomadic shepherds. The region is full of passes and valleys which have felt the footsteps of soldiers and merchants since ancient times. In the east central portion of the country in a valley between the Hindu Kush and the Koh-i-baba ranges lies Kabul, Afghanistan's capital and major city.

In general, the climate is rather dry, with annual rainfall averaging ten to 15 inches. The southwest experiences extremely windy, hot, dry summers. Winters are usually cold, especially to the north and in the mountainous regions. In the central highlands temperatures drop to minus 5° F or lower in the winter and snow is frequent. In the eastern-most part of the highlands, adjacent to northern Pakistan, winter snow often accumulates to six or seven feet. On the other hand, winters in the Wakhan corridor are generally cold and dry with temperatures often dropping below zero and an average annual rainfall of only four inches.

A transition climate between mountain and steppe prevails in the northern plain; as altitudes decline, temperature increases and rainfall decreases.

Limited access to water plagues Afghanistan's agricultural economy and hinders certain possibilities for development. Most of the inland waterways are landlocked; only a few in the eastern portion of the country reach the sea, by way of the Kabul and Indus Rivers. Other rivers rise in the mountains and flow into desert oases or lakes, leaving the desert lands to the southwest with almost no water. In the northern plains, many rivers disappear into the soil before they reach the Amu Darya. The Helmand River system drains almost one fourth of Afghanistan's land, while the Amu Darya system is second in amount of land drained. Snow-fed streams and rivers rise in the mountains and provide ample water supply during spring and early summer, but they often dry up as the weather becomes increasingly hot. Some smaller rivers are completely dry for as much as half the year. A developed transportation network is thus impractical for the Afghan rivers. Nor are the waterways very useful for the generation of hydroelectricity, a problem which is worsened by a scarcity of lakes to serve as reservoirs. Only a few power stations have been built, those on the Panjshir River to provide for Kabul's needs and those in the Helmand Valley. During the recent Second Five-Year Economic and Social Development Plan (1962-63 to 1966-67) some efforts were made to improve potential electricity generation and navigation on the Amu Darya.

Afghanistan's natural resources include a fairly good mineral potential, but relatively little is extracted because of poor transportation and lack of capital. Coal is present in large quantities (an estimated reserve of four million tons) at Kharkal and Aishpusta in the Kunduz Valley. A large reservoir of natural gas (about 70 billion cubic meters) has been discovered

near the Soviet border. Plans are afoot to sell four billion cubic meters of the gas per year to the U.S.S.R., as well as to use gas as the source of power for a new fertilizer plant near Mazar-i-sharif, some 75 miles from the discovery point.[3] Salt is mined in several locations. In the vicinity of the Hajigak Pass in central Afghanistan, iron ore, limestone, quartz, clay and sand have been found. Manganese, chromite and nickel are found in the Safed Koh Range, south of Kabul, but not in large quantities. Small deposits of many other minerals and metals have been discovered in several places; among these are copper, gold, lead, zinc, antimony, barite, graphite, sulfur and alumite. Afghanistan is rich in gem stones, such as beryls and lapis lazuli which has been mined for over 4,000 years. The central highlands have yielded kaolin for making porcelain, marble, granite, porphyry, quartz and mica.

Political history

Historical sketch: Due to Afghanistan's central location, the country has had a turbulent history marked by frequent invasions.[4] In 328 B.C. Alexander the Great captured Bactria (the present province of Balkh). His brief rule was followed by Turkish and Hunnish conquests. In the seventh century A.D. Afghanistan fell to the Arabs, who brought the Islamic religion to the country; today 99 percent of all Afghans belong to this faith. Next came the Persians, who were followed in 998 by the Turks, led by Mahmud of Hazni. Mahmud's dynasty did not long survive his death and thereafter the country was ruled by petty princes until the invasion of Genghis Khan in the thirteenth century. In the fourteenth century, Afghanistan became part of the far-flung empire of Tamerlane and subsequently Babur, who founded the Mogul dynasty in India.

Afghanistan became an independent kingdom in 1747 when Ahmad Shah Durrani was crowned king. Since then a member of his tribe has been on the throne, with one brief exception in 1929. During the nineteenth century, Afghanistan found itself in a vice between British imperialism on one side and Russian imperialism on the other. Bloody war with Great Britain broke out twice, from 1838 to 1842 and from 1878 to 1880. The latter war has often been recorded in fiction as well as in fact.* As a result of this war, Amir Abdur Rahman Khan ascended the throne, more or less as a puppet of the British. In 1893, he recognized the Durand line, which established the boundary between Afghanistan and British India and still serves as the border between Afghanistan and Pakistan. This line has been the cause of many subsequent border disputes.[5] During these years, the power of the royal government was strengthened and control over outlying areas tightened.

Afghanistan remained neutral during World War I despite German efforts to foment disturbances. In 1919 Amanullah Khan ascended the throne and shortly thereafter embarked upon the third Anglo-Afghan War, in the mistaken belief that conditions in India were ripe for revolt. Although the Afghans were soon defeated, the subsequent peace treaty gave Afghanistan complete control over its external affairs. Amanullah initiated political and social reforms, some of which--for example, abolition of the veil and compulsory education for females--were not received favorably by the people. Amanullah's passion for reform, along with his less than scrupulous handling of finances, led to his deposition by the bandit Bacha-i-Saqquo in 1929. He in turn was ousted within a few months by Nadir Khan,

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*By Kipling and Doyle, among others. In fact, the chronicler of Doyle's Sherlock Holmes series was introduced as recently returned from the second Afghan war.

who, with the assistance of his brothers, adopted a cautious plan of modernization, education and economic development. Nadir Khan's reign ended in 1929 when he was assassinated by a fanatic. His son, the present king, Mohammed Zahir Shah, succeeded him to the throne. Afghanistan remained neutral throughout World War II. A milestone of sorts was reached in 1963 when a commoner, Dr. Mohammed Yusof, assumed the office of prime minister, a post which until then had always been held by a brother or cousin of the king.

Current structure: In 1964 Afghanistan adopted a new, liberal constitution giving legal sanction to the ambitious reform program desired by the king.[6] This constitution, while based on the Shareia (Islamic Law), removed much of the power from the hands of the royal family, who, for example, could no longer hold positions in the government. For the first time, the rights of free speech, freedom of the press, foundation of political parties and free trial on criminal cases were guaranteed, although the freedom of political parties is not always upheld.

The legislature is bicameral, composed of the people's council, elected for four-year terms by universal and secret vote, and the council of elders, two thirds of whom are elected. The remaining members of the council of elders are appointed by the king. The prime minister is the leading administrator of the government; he is appointed by the king and need not be a member of the legislature or of the political party (if any) in power. He and other cabinet members are answerable to the people's council. There is also a loe jirga, or superordinary council, composed of legislators and the chairmen of provincial councils. Although the king can dismiss parliament, members retain their positions on the loe jirga

until a new legislature is elected. Initially twenty-nine provinces were created with the new constitution, each of which is subdivided into divisions, districts and cantons (in descending order of size) and has an elected council of its own; now there are actually twenty-eight provinces.

The judiciary consists of a supreme court and various lesser courts. In the absence of statutory law, the principles of the Hanifite version of the Shareia are invoked. Possible penalties for offenses vary from small fines to death.*

SOCIAL AND ECONOMIC SITUATION

Economic history

Afghanistan is essentially a poor, agricultural country. 1969 World Bank estimates of the Gross National Product (GNP) per capita are in the range of $70.** The 1971 World Population Data Sheet estimates a GNP per capita of $80. At present, the GNP growth is taking place quite slowly--so slowly, in fact, that the estimated rate of population growth equals or exceeds the rate of growth of GNP. The World Bank estimates show that GNP per capita is actually declining at the rate of 0.5 percent per year.

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*How well the Democracy-i-nao or "new democracy" is succeeding is a moot question according to Schonberg. The new parliament of 1969 has taken a decidedly conservative look, since some formerly suspicious landowners and elders participated and were elected, often at the expense of the intelligentsia. The latter group did not accomplish very much except to generate "exultant yards of often trivial oratory, . . . often critical of the government." The story goes on to say that the ban on political parties (supposedly guaranteed by the 1964 constitution) might be lifted in hopes of creating leaders with whom the government could lobby on behalf of its programs.[7]

**For Kabul in 1968, the Household Expenditure Survey, i.e., the survey conducted by Robert Nathan and Associates in 1968 where 2.5 percent of families in Kabul were included in the sample, finds the GNP per capita to be $109. The population component of this quotient was based on this Household Expenditure Survey and not the 1967 UN Population Enumeration of Kabul. The latter was supposed to have been a total enumeration but was judged by many as being of low quality. As Kabul is much more modernized than the rest of the country, this is not too surprising.[8]

Other estimates also confirm this decline.[9] Estimates of the size of GNP, like all other Afghan data, are very hard to come by. One estimate for 1953-54 gives a total GNP of 12,500 million afghanis, distributed as shown in Table 1.*

The division of personal income in 1958-59 is reported in Table 2. Income directly from agriculture represents 62 percent of the total; earnings of nomads are essentially from sheep raising and are therefore considered agricultural, along with earnings of farmers. Data from the Sample Survey of Kabul indicate that only one fourth of the city's income is farm-related.[10] Seventy-five to 80 percent of the population depend on agriculture for a livelihood. Ten percent of these people are nomads raising livestock; the remainder are farmers growing wheat, corn, barley, rye, cotton, fruits and vegetables.

Agricultural reform: The country was self-sufficient in all foodstuffs except sugar and tea until 1957 when wheat was imported for the first time. During the first and second five-year plans respectively (1957-58 to 1961-62 and 1962-63 to 1966-67), an average of 50,000 tons and 97,000 tons of wheat was imported annually. Recently, however, farmers have begun to accept improved seeds and chemical fertilizer so rapidly that Afghanistan is expected to become self-sufficient in wheat production again by the end of the third plan in 1972.[11]

Of the total area of Afghanistan, some 12 percent (or 7.8 million hectares**) is under cultivation. Of these, 5.8 million hectares have irrigation facilities, but only 2.5 million are irrigated in any given year due to the scarcity of water. About half the acreage devoted to

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*An afghani is officially worth 2.2 cents, although at the free market the value would be closer to 1.3 cents.

**1 hectare equals 10,000 square meters, 100 ares or 2.471 acres.

Table 1

Gross National Product, 1953-54

Sector	Afghanis (millions)		Percent of Total Gross National Product	
Agriculture				
Wheat	4,085		32.7	
Fruits	1,020		8.2	
Furs, pelts, wool	680		5.4	
Livestock	1,000		8.0	
Dairy products	1,000		8.0	
Other	1,215		9.7	
Subtotal		9,000		72.0
Nonagriculture				
Industry	800		6.4	
Trades and services	1,000		8.0	
Fuel	800		6.4	
Miscellaneous	900		7.2	
Subtotal		3,500		28.0
Grand Total		12,500		100.0

Source: Peter G. Franck, Afghanistan Between East and West (Washington: National Planning Association, 1960), p. 17.

Table 2

Distribution of Personal Income, 1958-59

Earnings	Percent of Total Personal Income	
Industrial employment	0.34	
Government employment	0.94	
Agricultural employment	8.21	
Nomads	9.85	
Armed forces	1.29	
Total earnings from employment		20.63
Professional persons and traders	14.94	
Farmers	53.59	
Cottage industries, crafts	4.39	
Total earnings from self-employment		72.92
Rents, interest, dividends		6.45

Source: Donald N. Wilber, Afghanistan: Its People, Its Society, Its Culture (New Haven: Human Relations Area Files Press, 1962), p. 280.

wheat and barley is not irrigated. Lack of water is not the only problem facing Afghan farmers, however. Methods are generally primitive, plots are usually too small to allow for much mechanization and productivity--despite recent advances--remains relatively low due to small capital inputs. The government has begun to subsidize wheat production and has established some demonstration plots of wheat.

Results of the programs implemented during the second five-year plan were disappointing. Although 115,000 additional hectares were supposed to be irrigated, irrigation was accomplished for only 31,000 hectares. Since the two planned fertilizer plants were not in operation by mid-March 1967, almost 38,000 tons of fertilizer had to be imported.[12]

Cotton continues to be a major cash crop, which is heavily exported. The government tried to increase production through compulsory acreage allotments, but the 25 percent price increase on the market was probably a primary factor in increased production. Fruit is also a major export crop. Data for trends in the production of these and other crops are given in Table 3. The quality of data is poor, except for the figures on cotton and sugar beet production (due to their commercial nature), but the growth rates are probably reasonably accurate.[13]

Industrialization: Until recently, industry had little opportunity to develop satisfactorily in Afghanistan. Most industry was of the cottage type and was beginning to deteriorate due to increasing dependence on imported products.[14] Industrial growth has picked up recently, although at the end of the second five-year plan only four factories in the country were privately owned. By November of 1969, 37 factories were in operation, and 76 more had been approved, representing some 19,000 jobs and $41 million in investments. Much of this spurt is due to the Foreign and Domestic

Table 3

Agricultural Production--Crops and Livestock
First and Second Five-Year Plans*

Commodity	Production			Area			Yield		
	First Five-Year Plan	Second Five-Year Plan	Compound Rate of Increase	First Five-Year Plan	Second Five-Year Plan	Compound Rate of Increase	First Five-Year Plan	Second Five-Year Plan	Compound Rate of Increase
	Metric Tons (thousands)	Metric Tons (thousands)	Percent	Hectares (thousands)	Hectares (thousands)	Percent	Kilos per hectare	Kilos per hectare	Percent
Food grains	3,554	3,577	0.1	3,266	3,407	0.8	1,088	1,050	-0.7
Wheat	2,203	2,156	-0.5	2,231	2,343	1.0	987	920	-1.4
Corn	674	715	1.2	494	500	0.2	1,364	1,430	0.9
Barley	364	378	0.8	336	350	0.8	1,083	1,080	0.0
Rice (milled)	313	328	0.9	205	214	1.1	1,527	1,533	0.1
Cotton (seed)	50	84	10.9	64	72	2.4	781	1,167	8.4
Sugar beets	41	55	6.1	3.8	3.7	-0.5	10,789	14,865	6.6
Sugar cane	41	48	2.7	1.6	1.9	3.5	25,625	25,263	-0.3
Oilseeds	48	51	1.2	148	150	0.3	324	340	1.0
Fruits	276	349	4.8	59	67	2.6	4,678	5,209	2.2
Vegetables	500	552	2.0	100	104	0.8	5,000	5,308	1.2
	Million	Million	Percent						
Sheep	19.0	20.1	1.1						
Ordinary sheep	14.9	14.4	-0.7						
Karakul sheep	4.1	5.7	5.6						
	Metric Tons (thousands)	Metric Tons (thousands)	Percent						
Wool	20.9**	23.0***	2.4						
Karakul pelts	2,500 **	2,560 ***	0.6						

*Year begins in mid-March
**1961
***1965
Source: Government of Afghanistan, Ministry of Agriculture.

Private Investment Law of 1967, which encourages and protects private industry. Nevertheless, such growth cannot be expected to continue without the creation of an industrial development bank which would be willing to finance projects with a probability of success lower than that currently required by the Afghan banks.[15]

Most industrial production has been in the form of textiles (cotton, wool and now rayon); recently the production of coal and cement has been on the increase. Table 4 shows trends of some industrial products from 1955-56 to 1966-67.

Industrial development is severely hampered by the lack of good transportation. No railroads have been built and few rivers are navigable. Much transportation is either by motor or by air, although in rural areas transportation by beasts of burden still predominates. An estimated 13,500 kilometers of highways, secondary roads and trails cover the country, of which 2,000 kilometers are paved highways, 5,500 are usually passable dirt roads and 6,000 are not always passable trails. In 1967, some 16,500 vehicles--8,100 automobiles, 7,150 trucks and 1,250 busses--were in the country. Plans of the Ministry of Public Works include a ring of paved highways surrounding the country with spurs going to Pakistan, Iran and the U.S.S.R.[16]

Changes in the gross national product and policies associated with it .

Although GNP figures are not available for recent years, estimates of the trend have been less than favorable, as indicated previously. World Bank and United States Bureau of International Commerce sources show stagnant or falling GNP per capita.[17] The government does hope to improve the standard of living of its people to a reasonable degree; however, it does not expect to attain a standard of living equal to that of the United States or Western Europe.[18]

Table 4

Industrial Production, 1955-56 to 1966-67

Product	Unit of Measurement	1955-56	1956-57	1957-58 to 1961-62 (average)	1962-63 to 1965-66 (average)	1965-66	1966-67
Cotton textiles	Meters (millions)	17.4	15.4	21.8	46.5	55.2	67.9
Cotton yarn	Metric Tons (thousands)	0.2	0.4	0.2	0.9	1.1	1.2
Rayon textiles	Meters (millions)	-	-	0.1	0.6	1.0	1.2
Woolen textiles	Meters (millions)	.21	.24	0.3	0.2	0.1*	0.33
Cement	Metric Tons (thousands)	-	-	32.9	112.0	143.2	163.4
Sugar	Metric Tons (thousands)	6.0	4.8	4.6	6.6	7.5	n.a.
Salt	Metric Tons (thousands)	-	-	24.6	30.5	38.9	n.a.
Coal	Metric Tons (thousands)	22.2	28.9	41.8	110.8	147.0	154.0
Electric power	Kilowatt Hours (millions)	24.3	29.3	85.7	182.0	184.3	340.3

*According to the Economist Intelligence Unit Quarterly, Economic Review; Pakistan and Afghanistan Annual Supplement, 1968, this figure should be 0.3.

Sources: Data for 1955-56 to 1956-57 are from Afghanistan Ministry of Planning, Survey of Progress, 1960, pp. 112-15 and 1959, 3, 1 cited in Donald N. Wilber, Afghanistan: Its People, Its Society, Its Culture (New Haven: Human Relations Area Files Press, 1962), p. 282. Data for 1957-58 to 1965-66 are from the United States Department of Agriculture and data for 1966-67 were taken from The Economist Intelligence Unit Quarterly Economic Review; Pakistan and Afghanistan Annual Supplement 1968, p. 15.

Afghanistan's leading partner in its quest for development has been the Soviet Union. Historically, this relationship dates back to the border dispute with Pakistan over the Pushtunistan region, when the United States refused to forego the ties it was then making with Pakistan.[19] When the United States would not supply arms to Afghanistan, the U.S.S.R. did, an action which began the present patterns of heavy Soviet aid and increased Afghan-Soviet trade.

Russia provided 58 percent of the required economic assistance to Afghanistan in 1964-65. Furthermore, the proximity of the U.S.S.R., the favorable foreign exchange rates and low handling charges led Griffiths to conclude that ". ... the bargain with the Russians is the only one of major importance."[20]

Total assistance from the United States through 1966 was $349 million, one third of which was foodstuffs. The balance was mostly transportation supplies, power plants and various types of technical assistance. The United States paid about 20 percent of the cost of the Helmand Valley project, an attempt to develop extensively a small region of the country.[21]

Aid from both nations has recently diminished, and it will be up to the Afghans themselves to do much of the remaining task of economic development. The previously mentioned Foreign and Domestic Private Investment Law of 1967 will no doubt attract foreign capital. The World Bank and its subsidiary organizations, International Development Association and International Finance Corporation, represent another potential source of capital.

The close relationship between Afghanistan and the Soviet Union is also reflected in foreign trade statistics. As Table 5 shows, the leading markets for Afghanistan's exports are the Soviet Union, the United States, the United Kingdom and Pakistan. The U.S.S.R. purchases much of the wool and

Table 5

Value of Trade by Country

First and Second Five-Year Plans*

Country	First Five-Year Plan (average)	Second Five-Year Plan (average)	Compound Rate of Increase (percent)	1965-66
	U.S. Dollars (millions)			
Exports				
U.S.S.R.	14.0	21.1	10.8	17.5
United States	10.7	10.0	- 1.6	11.0
United Kingdom	7.9	8.9	3.0	12.3
India	8.5	8.4	- 0.3	4.9
Pakistan	3.1	4.9	12.1	9.7
West Germany	4.4	4.6	1.1	5.5
Other barter countries	2.1	4.0	17.4	1.7
Other	1.8	5.2	30.4	7.4
Total	52.5	67.1	6.3	70.0
Imports				
U.S.S.R.	41.1	65.6	12.4	61.0
United States	14.0	18.8	7.6	20.0
West Germany	2.9	9.8	35.6	17.3
Japan	7.3	8.3	3.3	8.0
India	8.0	8.1	0.3	5.0
Other barter countries	3.5	5.8	13.5	5.6
Pakistan	2.8	2.7	- 0.9	4.0
United Kingdom	1.5	2.6	14.7	4.7
Other	3.8	6.7	15.2	5.4
Total	84.9	128.4	10.9	131.0
Commercial	48.9	61.1	5.7	56.6
Loans and grants	36.0	67.3	16.9	74.4

*Year begins in mid-March

Source: Government of Afghanistan, Ministry of Commerce, Afghanistan's Foreign Trade, pp. 1335-42 (1956-57 to 1963-64).

cotton, while more expensive items such as Karakul pelts go to North America and Western Europe. India and Pakistan provide most of the market for dried and fresh fruit. The principal exporters to Afghanistan are the Soviet Union, the United States, West Germany, Japan and India. The U.S.S.R. sells machinery, petroleum products, sugar, automobiles and foodstuffs. From the United States Afghanistan buys wheat, trucks, machinery, tobacco and used clothing. India and Japan provide fabrics and tea, and from Germany come various heavy industrial products.[22]

Afghanistan has had a long history of deficits in her balance of trade, which was consistently negative from 1958-59 to 1967-68.* The situation has been aggravated by the government's tax policy on exports. A direct tax is imposed on wool and cotton, and the artificially pegged exchange rate of 45 afghanis per dollar creates what is known as an "exchange rate surrender"--paying a higher real price in terms of hard currency because the sale is at the artificial rather than free market rate--on Karakul pelts and other exports.[24]

Afghanistan's problems cannot be solved until the country is able to find ways and means of increasing the production of the few exportable agricultural commodities and of improving the quality of these goods so they can be sold for convertible foreign currency in newer and better markets. The government has assigned high priority to a comprehensive export improvement program designed to create industries to process agricultural goods. Initial results can be seen in the greatly increased

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*In 1958-59 the deficit was $26 million. The remaining years show deficits as follows:[23]

1959-60	$21 million	1963-64	$57 million
1960-61	$37 million	1964-65	$66 million
1961-62	$46 million	1965-66	$61 million
1962-63	$57 million	1966-67	$86 million
		1967-68	$77 million

production of textiles in recent years (see Table 4). The government also hopes to arrange preferential trading agreements with nations other than the U.S.S.R.[25]

Employment

Data on the breakdown of employment are quite difficult to obtain. Figures for the country as a whole for 1964-65 and 1966-67 show what may be a very slight trend away from agricultural employment in relative terms, although the data classifications are not strictly comparable. (See Table 6.)[26]

For the city of Kabul, the Household Expenditure Survey of 1968 gave a detailed breakdown of those sampled by occupation and source of income. These data are shown in Table 7. Of the total of 11,870 persons in the survey, only 2,721 (or 23 percent) were gainfully employed. The sample seems to include a disproportionate number of highly placed personnel. Total earnings for the sample were 24,275,800 afghanis for the quarter before the survey. Of this amount, 18,062,500 afghanis (about 75 percent) were fixed income (salaries, fees, interest, rent, return on self-operated enterprises, pensions and other) and 6,213,300 were unfixed (from farming and grazing, tilling, land leasing, commodity income, subsidies and other). In short, the urban areas, as typified by Kabul, show a much greater portion of the total income originating from nonagricultural activities than does the balance of the country (see Table 2).

Social Structure

Observers of Afghan society agree that it is in a transitional stage.[27] The intensity of change is increased by the long period of isolation which the country experienced. Until recently, Afghan society was organized on vertical rather than horizontal lines; that is, social, economic and

Table 6

Total Employment by Sector, 1964-65 and 1966-67

Sector	Employment (thousands) 1964-65	1966-67
Agriculture	2,900	2,942
Industry	120	20
Handicrafts	200	210
Construction	-	83
Transportation and communications	*	30
Trade	**	100
Government	***	60
Social services	120	268
Nonagricultural in rural areas	400	-
Total	3,740	3,870

*Included with industry for 1964-65
**Not available separately for 1964-65
***Included with social services for 1964-65

Source: Quarterly Economic Review, Annual Supplements (1966 and 1968), p. 14 of each volume.

Table 7

Employment by Sector, Kabul, 1968

Sector		Number of Persons Employed
Government personnel		734
Cabinet ministers, judges	53	
Senior civil servants	201	
Clerks, head clerks	55	
Teachers	82	
Other officials	132	
Militia, police	112	
Skilled workers	63	
Unskilled workers	36	
Semigovernment and private industry		211
Executives	6	
High ranking officials	63	
Clerks, head clerks	15	
Skilled workers	81	
Unskilled workers	46	
Self-employed		1,571
Merchants	274	
Doctors, nurses, health personnel	46	
Family workers	455	
Skilled workers	38	
Unskilled workers	612	
Farmers and grazers	146	
Without occupation, other, unknown		205
Total		2,721

Source: A Summary of the Sample Survey of Kabul City (1968), pp. 7, 10.

political affiliations were determined by tribe, family or clan membership, rather than by loyalties to horizontal, nonkinship groups--those with common economic or political interests, for example. The present trend in Afghanistan, Poullada feels, is toward the formation of these horizontal groups, even though the pull of familial ties remains quite strong.[28] Many nonfamilial groups can be defined: the elite, including the royal family and the very wealthy (less than one percent of the population); the intelligentsia, including professionals, high level civil servants, army and religious leaders (about one percent of the population); the urban middle class of civil servants, scribes and priests (eight to nine percent of the population); the lower urban class of semiskilled and unskilled laborers, noncommissioned military and police (five to six percent of the population); and the lower rural class of farmers and nomads (about 85 percent of the population).

Role of women

Women in Afghanistan have traditionally been subordinate to male members of their families and, when married, to their husbands. Women rarely participate in activities outside their family circles, although they have often exerted considerable influence both within and without their homes through their husbands. Most women are still illiterate, but the number of schools for girls is increasing rapidly. Since the beginning of the removal of Purdah in 1954,[29] increasing numbers of young women, particularly in Kabul, have become somewhat liberated and are working in government offices, factories, stores and the like.[30] Some reflection of the improved status of women can be seen in the data on literacy from the Household Expenditure Survey of Kabul. Twenty-seven percent of the

4,099 females aged seven or older were literate to some degree, as compared with 45 percent literacy among all those over seven years old.*

Data on the specific number of women in various professions is somewhat sketchy. In 1966, 111 women (out of 656 total students) were enrolled in the Medical College of Kabul University, one third to one half of the country's nurses are women,[31] and women have also begun to join the teaching profession in larger numbers. In 1956, Kabul University had 100 faculty members, all of whom were male; by 1964, the faculty had grown to 367, 18 of whom were female. In other schools at least 90 percent of the 4,007 instructors in 1956 were male; by 1964 there were 5,571 male teachers and 1,072 female teachers. As Table 8 shows, dramatic growth took place also in the number of schools and pupils, particularly in schools for girls, between 1956 and 1964. The number of boys' schools increased by approximately 90 percent; the schools served over twice as many pupils. The number of girls' schools increased tenfold with more than four times as many students in 1964.[32]

Education

The above data on the changing role of women in Afghanistan incidentally provide a good view of some of the trends in Afghan education, at least in terms of physical inputs and outputs. To complete the picture, it should be noted that the average number of teachers per school fell from five in 1956 to four in 1964 and the student-teacher ratio rose from 31 to 46.[33] Overall literacy levels are estimated to be about ten percent for males, two percent for females and six percent for the whole population. Lobashev estimates that 3.6 percent of the entire rural population are literate.[34]

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*The definition of literacy used in the survey is not given in reports available thus far.

Table 8

Number of Schools and Number of Pupils by Sex

Year	Schools for Males	Number of Pupils	Schools for Females	Number of Pupils
1956	770	113,957	26	11,081
1964	1,460	262,643	283	45,050

Source: Louis Dupree, "Afghanistan: 1966," AUFSR:SAS, Vol. 10 (1966), p. 9.

While education has been, and to a significant extent still is, religious in orientation particularly at the lower levels, a wide spectrum of training is available today, primarily in urban areas. A great turning point in Afghan education occurred when Amir Habibullah visited India in 1907. Impressed by training in commerce and law given Muslim students of Aligarh College near Delhi, he established a secondary school near Kabul, instituting a curriculum which combined traditional study of the Quraan and European-type studies. Habibullah's successor, Amanullah Khan, founded three more secondary schools in the 1920s, all featuring instruction in a different foreign language--French at Istiqlal, German at Nejat and English at Ghazi. American teachers had staffed the school at Kabul, but Afghans are now beginning to replace foreign instructors at some of the educational institutions.[35]

As Table 9 indicates, total school enrollment in Afghanistan rose from 1,350 pupils in 1932 to nearly a half million in 1967-68. Under the second five-year plan, expansion of educational facilities centered on the vocational and high school levels, rather than the village, primary and secondary (or middle) levels.* The estimated population of children aged seven to 12 attending school rose from 11.5 percent to 21 percent between 1962 and 1967. All physical plant goals of the plan (except on the vocational level, where curriculum changes impeded progress) and most enrollment goals were met at least a year early. Table 10 gives school enrollments, number of schools and targets for the last two years of the plan. None of

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*Village schools cover grades 1-3; primary schools, grades 1-6; secondary schools, grades 7-9 and high schools and vocational schools, grades 10-12.

Table 9

Total School Enrollment

1932-1968

Year	Enrollment
1932	1,350
1951	98,743
1957	125,218
1961	233,314
1964	307,693
1966	403,285
1968	454,609

Source: Kabul Times Annual (Kabul: Government Press, 1967), pp. 37-38.

Table 10

Number of Schools, Enrollments and Targets

1965-66 and 1966-67

Level	1965-66		1966-67		Second Plan Target	
	Schools (Number)	Students (Number)	Schools (Number)	Students (Number)	Schools (Number)	Students (Number)
Village	1,222	84,512	1,391	88,634	1,118	56,122
Primary	656	273,525	734	308,521	655	218,680
Secondary	122	27,912	164	35,227	97	19,861
High School	30	6,070	40	7,712	26	8,189
Vocational	56	11,266	58	14,515	75	14,762

Source: The Kabul Times Annual (Kabul: Government Press, 1967), p. 37.

the targets not reached by the end of 1965-66 were achieved during 1966-67, although the number of vocational students was within 247 of the target number and the number of high school students was just 477 shy of the goal.

By 1980, the Ministry of Education hopes to have 64.5 percent of those aged seven to 12, 15.7 percent of those aged 13-15 and 5.1 percent of those aged 16-18 in school; the figures for 1965 were 17.6 percent, 2.9 percent and 0.7 percent, respectively. By 1980, the total population is expected to be 20.1 million, if current rates of increase prevail. The third five-year plan envisages 67,000 annual graduations from primary school (compared with the 1966 figure of 28,000); 12,500 from secondary school (6,700 in 1966) and 4,300 from high school (1,500 in 1966). The current budget calls for the expenditure of 950 million afghanis in primary and village schools and 120 million in secondary, vocational and high schools over the period of the plan.[36]

Teacher training is given the highest priority by the government. The Ministry of Education employed 19,908 teachers in 1966 and planned to increase this number to 55,896 by 1971. In 1966, 6,229 students attended 33 teachers' schools, with 772 graduating. The ministry hopes to have 11,000 persons enrolled in teacher training programs by the end of the planning period. Students are trained to teach at the primary, secondary and high school levels. In addition, many teachers come out of the Colleges of Science, Education, Letters and Theology at Kabul University. To attract teachers, the government has recently raised salaries and provided exemption from military service to those who teach for six consecutive years.[37]

Technical schools in Afghanistan date from 1927 when a school for mechanics was founded in Kabul. Two years later a school of arts and crafts began, also located in the capital. Both accepted sixth grade

graduates and gave three-year courses in iron work, tool repair, carpentry, masonry, tailoring, weaving and painting. As of 1957, the only skilled workers in the country who were not graduates of these schools were members of the Afghan Institute of Technology's first two graduating classes. Other technical schools have been opened in Farah, Kandahar, Khost, the Helmand Valley area (an agricultural school moved from Kabul), Herat and Kunduz.

In addition to these formalized institutions, various government agencies conduct courses in commerce, management, mining, public health and construction work.

Kabul University was founded in 1932 as a college of medicine and has since grown to include colleges of law and political science, economics, science, letters, engineering, agriculture, education, theology and a polytechnic institute. Over 2,000 persons have graduated from Kabul University, which has been coeducational to some extent since 1949. The university is, or has been, affiliated to some degree with the Universities of Paris, Bonn and Wyoming and with Columbia University. The Soviet Union is providing the initial staffing for the new polytechnic institute. In 1963 a medical college was opened at Nangarhar, which, it is hoped, will eventually develop into a complete university itself. There is also an independent medical college at Jalalabad.[38]

Large economic projects and take-offs

Afghanistan has a history of directed development. As long ago as the late 1940s, the government had an informal development plan, which provided for most investment to go into the agricultural sphere, mainly for irrigation projects. Relatively little was spent on fixed asset projects such as

power plants. Franck, in 1949, pointed out that the government did not have sufficient revenue-generating power to carry out the actual investment; its role was allocative, using whatever private capital it could obtain.[39]

The first formal development plan began on March 21, 1959, followed by the second five-year plan in 1962 and the third in 1967. As Table 11 shows, the first plan spent a total of 10,289 million afghanis ($134 million); the second, 31,353 million afghanis ($408 million). Estimates for the third plan call for spending some $800 million, 75 percent of which will come from foreign aid funds. Due to this foreign aid, the operation of various public enterprises and the more widespread incidence of taxation, the government now has more precise control over development than previously.

The 1966-67 budget planned expenditures from internal funds of 5,150 million afghanis; in addition, 3,150 million were to be spent from foreign funds for a total of 8,300 million. Of this amount, 1,860 million afghanis of the internal funds and all of the foreign funds were to be directed toward development projects. The budget allocations are shown in Table 12. Regular revenue from taxes, services, property sales and leases, government enterprises and the like provided 3,950 million afghanis, and Afghan earnings from sales of consumer goods obtained on credit brought in 1,000 million afghanis. The deficit, balanced by a loan from D'Afghanistan Bank, amounted to 200 million afghanis.[40]

DEMOGRAPHIC SITUATION

Population trends

This section must begin with the following quotation from an American student of Afghanistan: "Last year [about 1955] a prominent Afghan told

Table 11

Distribution of Expenditures by Sector

First and Second Five-Year Plans

Sector	First Plan (million afghanis)	Second Plan (million afghanis)
Industry	2,725	6,439
Agriculture	1,283	7,360
Transportation	4,989	5,640
Education and health	795	3,510
Electricity	118	4,158
Communications		2,366
Other	379	1,880
Total	10,289	31,353

Source: Quarterly Economic Review: Pakistan, Afghanistan, Annual Supplement, 1966, 1968, (London: The Economist Intelligence Unit, 1966, 1968).

Table 12

Planned Budget Expenditures, 1966-67

Item	Amount Allotted (million afghanis)	Percent of Total Development Budget
Development projects		
Agriculture	1,081	21.7
Mines and industry	1,849	36.9
Transportation	1,024	20.4
Education	546	10.9
Social and cultural programs	393	7.8
Communications	117	2.3
Subtotal	5,010	100.0
Regular operating expenses	2,311	
Payment of government and central bank debts	541	
Subsidies to industry and agriculture	140	
Miscellaneous	298	
Total	8,300	

Sources: The Kabul Times Annual (Kabul: Government Press, 1967), p. 47 and John Cedric Griffiths, Afghanistan (New York: Frederick A. Praeger, 1967), p. 146.

me: 'There is no such things as Afghan statistics' . . .I think he was right."[41] He still is. It would be wise to keep this statement in mind throughout this section on the demographic situation in Afghanistan.

For example, the U.S. Embassy in Kabul, in its 1968 annual report on the economic trends of the country said that total population size was "between 6,000,000 and 16,000,000, perhaps 1.9% annual growth."[42] Recent estimates for the population of Afghanistan are as follows: 1969, USAID, 16,297,000; 1967, United Nations, 15,751,000; 1966, Gerald I. Zatuchni, 15,900,000 and 1967, Aleksandr I. Lobashev, 15,386,000.[43] These figures would place population density at 60 to 70 persons per square mile, or 22 to 24 persons per square kilometer, which is about 40 percent of the density for all of South Asia. The United Nations and the Lobashev estimates also contain time trend estimates from 1958 and from 1961, respectively, which are shown with the computed annual rates of increase in Table 13.

Although the estimates are not strictly comparable in terms of population size, since the United Nations data are for mid-year population while Lobashev's are for the end of the fiscal year on March 20, and although the data disagree slightly on average annual growth rate, both estimates do show that the growth rate had begun to rise by the end of the second five-year plan, presumably due to slightly improved public health conditions. At 1967 rates, the population of Afghanistan would double every 30 to 40 years. No census has ever been taken in the country, and one does not appear likely in the near future.* Lobashev has prepared estimates for

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*The United States Department of the Army lists the following as barriers to conducting a census: inaccessibility of some regions, religious resistance, demand for privacy and fear of use for taxation or conscription.[44]

Table 13

Population Estimates, 1958-67

Year	United Nations Population Estimate (thousands)	Percent Growth Rate	Lobashev Population Estimate (thousands)	Percent Growth Rate
1958	13,325			
		1.76		
1959	13,560			
		1.77		
1960	13,800			
		1.75		
1961	14,042		13,900	
		1.74		1.70
1962	14,287		14,136	
		1.75		1.70
1963	14,537		14,376	
		1.75		1.70
1964	14,792		14,620	
		1.75		1.70
1965	15,051		14,868	
		2.3		1.70
1966	15,397		15,121	
		2.3		1.75
1967	15,751		15,386	

Sources: United Nations Department of Economic and Social Affairs, Demographic Yearbook, 1967 (New York: United Nations, 1969), p. 127 and Aleksandr Ivanovich Lobashev, Sel'skoe Naselenie i Sel'skoe Khoziaistvo Afghanistana v Isifrakh (Rural Population and Rural Agriculture of Afghanistan in Figures; in Russian; Moscow: Izd-vo Nauka, 1967), p. 18.

population, urban and rural, by province, but since provincial boundaries were completely altered in 1964, his data are useful only in the aggregate. According to Lobashev's data for 1961, 91 percent of Afghanistan's then 13.9 million people were living in rural areas.[45] Zatuchni estimated that 90 percent of all Afghans were living in rural areas in 1966.[46] Surveys done in 1967 indicate that the population of Greater Kabul is 456,342 and that of Kandahar, 123,938.[47]

Population composition

Age and sex composition: Lobashev's estimates, which agree with those in the Department of the Army's Area Handbook, indicate that about 52 percent of the population is male and that, of the males, 51 percent are of working age (between 15 and 64).[48] The Population Enumeration of Kabul in 1967 showed that 44.8 percent of the total population were under 15 years of age and 3.2 percent were over 65, leaving 52 percent in the 15-64 age group, whereas the Sample Survey of Kabul in 1968 gave these data as 48.1 percent and 2.9 percent, respectively, with 49 percent of the population in the 15-64 group. The Population Enumeration also indicated that 56 percent of the population were male; the Sample Survey indicated 53 percent. Whether these data are significantly different from those above, or whether they merely reflect a sample bias is impossible to say. The Sample Survey also indicated that 74 percent of those aged zero to 14 (a total of 5,711) earned income during the past quarter.[49] Perhaps the working force estimates presented above should be altered to include some provision for child labor.

Ethnic and religious composition: The inhabitants of Afghanistan are, almost without exception, Muslim. About 80 percent of the Muslims,

including nearly all major ethnic groups, belong to the Sunni (orthodox) sect of Islam. Most rulers have been of this sect. Most of the remaining Muslims belong to the Shiite sect. A very small scattering of Hindus, Buddhists, Zoroastrians, Jews and Christians--all foreigners--are concentrated in urban areas.[50] Prior to the adoption of the 1964 constitution, non-Muslims were in the somewhat precarious position of having non-guaranteed rights, since they were under the protection of the Muslims. The new constitution abolishes these distinctions and guarantees freedom of religion if its practice does not create a public nuisance.[51] (Proselytizing by non-Muslim and heretical Muslim groups constitutes a public nuisance.)

The people of Afghanistan vary greatly in structure, color, race and features, being, as Griffiths puts it " . . .the ethnic sediment deposited in the tidal wave of at least two thousand years of invasions, sweeping by along the breakwater of the Hindu Kush and towards India."[52] Most of those from Central Asia had similar cultural patterns, so that the apparent heterogeneity is more a surface distinction than a deep-rooted one. The Pushtuns comprise 60 percent of the population and are the "true Afghans." This group includes the royal family and most of the upper and middle classes. The other major ethnic group is the Tajiks of Iranian origin, who comprise 30 percent of the population and who tend most often to be farmers or craftsmen. The languages of these groups, Pushtu and Persian, respectively, are relatives within the Iranian language groups, and both are official languages of the state. Other ethnic groups with some representation include Uzbeks (five percent of the population), Turkomens (1.5 percent of the population) and small numbers of Kirghiz, Charar-almak, Baluchi and Kafirs (or Nuristani).[53]

The social institutions of the country are predominantly influenced by religious and traditional beliefs. The primary concern here is the Afghan's attitude toward change, particularly in the area of family limitation, which will be taken up in a subsequent section. Some points should be considered here, however, so that much of the following discussion can be viewed in the proper frame of reference.[54]

1. Muslims tend to be fatalistic.

2. The king serves a dual role as religious and civic leader; hence it is difficult to sift out religious from political decisions, although, as Wilber points out, the religious role of the king has diminished somewhat in recent years.[55]

3. Much of the educational system, both in the mosque schools and in some training on the university level (law, for example), is religiously oriented. The Ministry of Education operates a large and progressive school, the Madrassa Ulum-i-shareia (translated Sciences of Islamic Law) near Kabul. The aim of the school is to preserve the religious and moral heritage of the country, while taking into account the modern way of life. In practice, such a goal may prove difficult because of the conservative attitude toward change characterizing many of Afghanistan's most important families.

4. The basis of the legal system is the Shareia (Islamic Law).

5. Religious endowments play an important part in the economy of all Muslim countries. Much as in the United States, the income from endowments is tax exempt as long as it goes to a pious foundation or to the descendants of the founder. Lands so held often become sources of funds for the constitution and maintenance of mosques, schools and hospitals. In Afghanistan, the control of such lands had, somewhat surprisingly, gone over to

the Ministry of Education years earlier than in other Muslim nations, where secular trends have, in many cases, been much stronger.[56]

Vital rates

Birth rate trends: The only published estimate of the birth rate of Afghanistan is that of Zatuchni, who estimates that for the 1966 population of 15.9 million (his estimate), there were 580,000 births.[57] This yields a crude birth rate of 36.48 births per thousand population, which seems rather low in light of published birth rates for other Muslim nations which range between 40 and 53 births per thousand population for 1966.[58] In the absence of a family planning program on anything like a national scale, it seems probable that the crude birth rate of Afghanistan is considerably higher than the Zatuchni estimate. It is unlikely that this rate has shown any tendency to decline in recent years, although no data exist to support this view. The 1,685 households sampled in the Household Expenditure Survey of Kabul totalled 11,870 persons, an average of 7.04 persons per household, which compares fairly well with the 6.3 persons per household figure obtained on the Population Enumeration of Kabul taken in 1967.[59] To what extent these figures represent high fertility and to what extent extended family arrangements is impossible to say.

Death rate trends: Since birth rates for the nation as a whole are probably between 43 and 50 births per thousand population, and since estimates of the rate of natural increase range from 17.5 to 23.0, the crude death rate is probably effectively bracketed by the range 20 to 33 deaths per thousand population. Crude death rates in other Muslim countries for 1968 are between 11 and 20 deaths per thousand population.[60] The Area Handbook for Afghanistan suggests that higher death rates reflect the effect of widespread enteric and other childhood diseases and the extreme scarcity

of modern medical care outside the urban centers. Estimates in the handbook suggest that 40 percent of all infants die before their second birthday and that there is one physician for every 30,000 population in the country as a whole.[61]

The death rate is probably declining slowly because of recent improvements in public health, although the rate of decline is very likely less than in comparable nations due to the extreme inaccessibility of much of Afghanistan's population. Diseases such as tuberculosis, measles, diphtheria, whooping cough, fever, cholera, typhoid, dysentery and smallpox are not uncommon. Malaria, although still a serious problem, has recently been brought under some control. The incidence of disease will be discussed more fully in the following section on the epidemiologic situation.[62]

Migration trends: Data on internal migration are simply nonexistent. Wilber reports that there is a "modest" amount of migration from the rural areas to the towns,but he provides no statistics. The severe winters and poor economic conditions lead many Hazaras (nomads of Mongol ancestry) to go to towns where they can earn a living as servants or laborers, returning to their families in the spring. Sometimes these nomads bring their families and settle permanently, most often in Kabul. External migration is negligible and very difficult due to government policy and control. For seasonal migration of nomads, however, special regulations are in force.[63]

EPIDEMIOLOGIC SITUATION

Disease incidence

Data on disease specific morbidity and mortality rates are not available on a countrywide basis. The best indicators of the present situation are the surveys taken by visiting medical specialists.[64]

Table 14 summarizes available information on all principal diseases. It should be noted that all numbers relating to morbidity represent, at best, only those cases treated in hospitals; very likely the true figures are much higher.

A few additional comments should be made about some of the more serious diseases. During the period 1948 to 1965-66, the annual number of typhoid cases ranged from 1,511 in 1953 to 200 in 1957. Since 1959-60 the range of 400 to 600 cases per year has held constant, except in 1961-62 when 745 cases were reported. Fischer feels that Afghanistan is less affected than its neighbors due to geophysical and climatic peculiarities.[65]

Although the prevalence of dysentery cannot be known certainly, Fischer points out that in the 1940s 12.7 percent of the population of Tashkent in Soviet Turkestan were infected; in other regions of Turkestan morbidity levels rose as high as 40 percent.[66]

Cholera appeared eight times between 1922 and 1965, with extremely serious outbreaks occurring in 1938, 1939, 1960 and 1965. Almost 4,000 cases were reported in the latter half of 1938; the fatality rate--for those treated--was 56 percent. In 1960, of 889 reported cases during the months of May to October, 199 cases died. In 1965, again in the months of May through October, there were 1,564 cases and 325 deaths despite some 111,000 vaccinations performed by Afghan and Soviet doctors.[67]

A survey taken in 1950 showed that nearly half of those school children aged 16 years included in the sample gave a positive reaction to a tuberculin test. For males only, 73 percent reacted positively to the text at age 20 and 85 percent at age 23. Similar studies done in Lahore, Pakistan, showed an average of 67.8 percent positive reactions.[68]

Table 14

Summary of Information about Principal Diseases of Afghanistan

I. Diseases spread or contracted mainly through the intestinal tract	
Typhoid	Occurs primarily in spring and summer months, usually through water-borne epidemics; spread of disease facilitated by unsanitary methods of food handling; annual number of cases in range of 400-600 since 1959-60
Dysentery	Widespread; a major cause of infant and childhood mortality; amebic variety in the 2,000-3,000 cases per year range in early 1950s; fewer than 1,000 cases per year recently; bacillary version in the 2,000-9,000 cases per year range with no clear cut trend evident
Cholera	Non-endemic; epidemics occasionally following importation from Central India; last major outbreak in 1965; fatality rate of those contracting disease quite high (over 50 percent of those treated in some instances)
Helminthiasis	Almost universal among children; numerous infections with dog and beef tapeworms
II. Diseases spread or contracted through the respiratory tract	
Tuberculosis	Serious health problem; treatment facilities only recently extended outside Kabul; data on morbidity very sporadic
Smallpox	Epidemics almost annually on a small scale, usually in fall and winter months; vaccination supposedly compulsory, but actual enforcement limited to school children in urban areas; current number of cases reported annually, from 150 to 400
Measles	1,000 to 2,000 cases reported annually; no trend evident
Whooping Cough	Frequent, but not inordinately widespread in Kabul
Diphtheria, Scarlet Fever, Poliomyelitis	Sporadic and relatively uncommon, but incidence, or at least awareness of these diseases, (especially poliomyelitis), increasing in recent years

Table 14 (continued)

Summary of Information about Principal Diseases of Afghanistan

III.	Diseases spread or contracted through human contact	
	Venereal diseases	Syphilis and gonorrhea most common; incidence uncertain since reports conflict
	Trachoma	Widely distributed, endemic in some areas; ten to 15 percent of population of Herat and Kabul estimated to be infected; particularly common among children, especially those from poorer families
	Leprosy	Endemic in central and western areas of country; latest estimate (1952) of 1,200 to 3,000 lepers in the country
	Impetigo, Scabies	Very frequent among children
IV.	Diseases spread or contracted through arthropods	
	Malaria	Principal disease problem, despite efforts of Ministry of Public Health; endemic everywhere except high mountain regions and deserts
	Rickettsial infections	Traditionally recurrent epidemics in spring and winter; 1,000 reported cases in Kandahar province alone in 1947-48; rare in recent years (one reported case in 1964)
	Relapsing fever	Sporadic in eastern and northern regions; occurring in early spring and late autumn months; sharply declining in incidence
	Plague	Endemic, but no outbreaks since 1906
	Oriental sores	Common, especially in Herat and Kandahar provinces
	Sandfly fever, Dengue	Sporadic

Table 14 (continued)

Summary of Information about Principal Diseases of Afghanistan

V. Other diseases	
Under- and malnutrition	Common
Rickets, Osteomalacia, Vitamin A and C Deficiencies	Sporadic
Scurvy	Occasionally found in desert areas
Goiter	Endemic in northeastern regions, especially in and around Amu Darya Valley
Infectious hepatitis	Endemic; occasional epidemics
Drug addiction	Opium smoking in western provinces; hashish consumption in northernmost provinces

Sources: Ludolph Fischer, Afghanistan: A Geomedical Monograph (Berlin: Springer-Verlag, 1968); James Stevens Simmons et al., Global Epidemiology: A Geography of Disease and Sanitation, Vol. 3 (Philadelphia: J. B. Lippincott Company, 1954); J. C. Cutler, "A Survey of Venereal Diseases in Afghanistan," Bulletin of the World Health Organization, Vol. 2 (1950), pp. 689-703.

Data on incidence of measles and whooping cough are unusually unreliable, since medical consultation for these diseases is a relatively uncommon phenomenon.

The extent of venereal disease is uncertain; studies by WHO personnel showed that among 7,768 patients, only 29 were suffering from fresh primary syphilis, 79 from the secondary form and 241 from later syphilis--a total of 4.5 percent. Another study indicated that 80 of 3,534 patients (2.3 percent) were affected.[69]

Although data on annual infections of malaria are not available, the work of the Ministry of Public Health in combating the disease has been impressive, after starting in 1948 with a small area of Kabul. The estimated number of persons protected has risen steadily--from 8,000 in 1948 to 570,000 in 1951 to 1.4 million in 1955 to four million in 1963 to 5.1 million in 1966-67. Plans to cover the balance of the population are being implemented. By 1953, most of the parasite reservoirs in the target areas had been eliminated.[70]

Among the public health problems in Afghanistan is the traditional habit of consultation with the mullah (village religious official) in times of illness, a problem which is aggravated by the nearly complete absence of doctors everywhere but in Kabul and a few of the larger provincial capitals.

Drinking water is unsafe almost everywhere, including the capital. No sanitary waste disposal facilities exist in towns, and as a result, " . . . the dry dust of animal and human excreta is constantly whirled about by the wind and feet of the passers-by."[71] Open irrigation ditches provide water for the washing of food, clothing and bodies, as well as for cooking and consumption.

Health services

Structure and coverage of health system: The development of modern health services began in 1931, and the Ministry of Public Health was established in 1934. Initial emphasis was on curative medicine, through the construction of hospitals and the opening of clinics. Recently, the emphasis has switched to preventive medicine, despite the greater cost of the latter type of program.[72] In 1965-66 the Ministry of Public Health spent 98 million afghanis, mostly in the area of preventive medicine. The ministry runs an extensive four-stage malaria eradication program, consisting of survey, DDT spraying, "attack" and consultation and surveillance. DDT is estimated to be used in the homes of 4,715,378 people.[73]

Other programs operated by the ministry include the Tuberculosis Institute, the Public Health Institute, the Institute of Vaccine Production, the Department of Preventive Medicine and the Rozantoon (Maternal and Child Health) Organization.

The Public Health Institute trains personnel, disseminates health information, provides advice and technical assistance to various local health projects and carries out research projects. Among the institute's activities are production of a weekly radio program on public health for Radio Kabul and public health courses at the Teacher Training College and the College of Education at Kabul University. The institute also sends out propaganda missions to the provinces to publicize various antidisease campaigns.

The Department of Preventive Medicine, established in 1965, performed over 4.7 million smallpox, cholera and typhoid vaccinations during the period from September 1965 to September 1966. Mobile units of technicians, health inspectors, innoculators, doctors and specialists fanned out from Kabul and covered all provinces at some time during that year.[74]

The task of the Rozantoon Organization is to advise pregnant women on the care to be taken during their term to prepare them for confinement, to carry out the delivery in accordance with modern medical methods, to instruct young mothers in proper techniques of the care and feeding of infants and to train midwives. Recently, Rozantoon units have moved out to the provinces and seven advisory outpatient clinics have been established. Several units have been opened in provincial hospitals in the larger towns. The organization is also cooperating with the newly formed Afghan Family Guidance Association.[75]

Some mention should be made here of the Red Crescent, the equivalent in Muslim countries of the Red Cross. Its headquarters are naturally in Kabul, with 18 branches maintained throughout the country. The organization gives invaluable assistance in times of natural disaster such as floods and landslides, giving food, medicine, clothing, blankets and financial assistance to the victims.

Health insurance plans are not widespread, although some industrial firms maintain hospitals or clinics for their employees. The textile company runs hospitals at Pol-i-Khumri, Jabel-uz-Seradj and Gulbahar. The cotton company built the aforementioned hospital at Kunduz; the oil company and the Ministry of Public Health have maintained small clinics for their employees. Work in the field of industrial accident prevention has just begun under the leadership of the Department of Occupational Hygiene of the Ministry of Mining.[76]

The first health insurance plan in the country was established in the 1940s by the Bank-Mille in the capital, solely for its employees. The concept has since spread and now includes many other industrial concerns as well as the various ministries of the government. The deductions taken from salaries are relatively small (about three percent), and medicines--

especially those which must be imported--are relatively expensive; thus, it is the employer who bears the brunt of insurance costs. For those living outside Kabul, only government employees and those working for the firms which maintain their own hospitals would be covered by health plans. It is probably safe to say that health insurance plans cover less than ten percent of all Afghans.[77]

Specific indicators: In 1960 there were 56 hospitals in the country, with a total of about 1,800 beds. Fewer than 220 doctors were attached to these hospitals, and the number of physicians in private practice was also small. By the end of 1966, a total of 713 doctors had graduated from the medical school at Kabul, and the medical college at Nangarhar has graduated two classes. Even though the number of doctors has increased since 1960, the Afghans are still woefully short in this department. Fischer reports 546 doctors in the country in 1968. The school of nursing at the medical college was established in 1936, but only 300 nurses, 100 of whom were females, were in the country in 1960. In 1966 there were 152 nursing students, 75 of whom were women.[78] No more recent data are available. Given these shortages and considering the relatively long training period needed for medical personnel, it is not too surprising that the government has concentrated on training paramedical personnel such as technicians, midwives, assistant nurses and pharmacists. Many of those going into these fields are likely to be women.[79]

The geographical distribution of health personnel is very uneven. The city of Kabul with 425,000 citizens has about 450 registered doctors and assistant doctors, or one doctor for every 940 inhabitants. Most other large towns such as Kandahar, Herat, Mazar-i-sharif and Jalalabad are relatively well-staffed by doctors. The remaining provinces, especially

those in mountain areas, have no more than one doctor each, usually practicing in the provincial capital. Recent developments in motor and air transportation have made it possible to transfer serious cases to the capital in a matter of hours. All in all, ". . .medical care in the country [that is, rural areas] is totally inadequate."

Almost all doctors are employed by the Ministry of Public Health on a salary basis, but are permitted to establish a private practice during off-duty hours. This arrangement can be quite remunerative in urban areas; in rural areas, however, expected financial gains are about nil. In addition, the poverty of rural people, the long distances to be travelled by poor transportation, the lack of sanitary facilities, the use of folk medicine and absence of necessary pharmaceuticals make the rural physician's task so difficult that it is practically an impossible undertaking. Understandably, physicians are therefore unwilling to practice outside the urban areas.

As would be expected, most of the hospitals in the country are located in and around the capital. Hospitals are usually for the exclusive use of members of one sex or the other. The largest hospital is the University Hospital for men which has about 500 beds. The hospital was built shortly after the opening of the medical college and has expanded several times since then. The hospital for women is the largest female hospital, having some 300 beds. It has an obstetrics-gynecology ward as well as surgical, internal disease and children's wards. Other hospitals in the capital include the Avicenna, Wezirakbar (the newest), Shararah Maternity Hospital and two tuberculosis hospitals. The total number of beds in all these was 1,447 in 1964, having increased from 919 beds in 1960. Kabul also has a central outpatient clinic under the aegis of the Ministry of Public Health, but data on current attendance are not available.[80]

The larger provincial capitals (such as Herat and Kandarhar) have their own hospitals, which are generally old but well-equipped with essentials such as X-ray apparatus, laboratories, operating theaters and dental wards. Kunduz has a new hospital recently built by the cotton company, and the government has completed a hospital in the town of Lashkargah. Many small (ten- to 20-bed) hospitals can be found in rural areas, often bereft of almost all necessary equipment and supplies. The total number of hospital beds in the country rose from 1,800 in 1960 to 2,271 in 1965 and to 2,730 in 1968.[81]

FAMILY PLANNING PROGRAMS

Deliberate population policies

As mentioned above, government policy is strongly opposed to emigration, although no special enticements are offered for prospective immigrants. The Ministry of Public Health cooperates with the newly formed Afghan Family Guidance Association by encouraging use of government health facilities for family planning and by allowing government personnel to assist the program. Maternal and child health centers will also be integrated into the program. Government support seems to be based more on health motives than family limitation,[82] which is not uncommon among Muslim nations, although official statements by some governments have lately been moving in the direction of holding family limitation as a necessary if not sufficient condition for development.[83]

Wilber suggests that ". . . the population of Afghanistan has ample room to increase, even to double, without economic danger, provided the resources of the country are developed."[84] Although this statement is subject to question on many grounds (especially considering the high infant

mortality rate and the resources used to support children who die before reaching productive age), the government's policy on population increase is not clear. To date, the most positive governmental action, other than cooperating with the family guidance association, has been settling new lands with Pushtuns, often planting colonies among other ethnic groups. There have been no statements, however, suggesting that the Pushtun majority fears the increasing strength of minority groups. As irrigation spreads through the Kunduz valley, large numbers of settlers are being brought in. However, forced migration, as done by Shah Abbas in the seventeenth century and Abdur Rahman in the nineteenth, is a thing of the past. Wilber holds that the lack of rural-urban migration is one of the nation's biggest problems. It is already very difficult to find workers for new plants and factories; yet, at the same time, rural Afghanistan is "underpopulated" (in what sense Wilber means this is unclear), and cannot afford to lose too many more workers to the towns.[85]

Programs for family planning

The Afghan Family Guidance Association (AFGA), the only group working in the realm of family planning within the country, was founded on July 22, 1968, after its constitution was approved by the government. The association is a voluntary group, founded with the encouragement of the International Planned Parenthood Federation with financial assistance from both that organization and the United States Agency for International Development, in cooperation with the Ministry of Public Health. At the end of its first year of operation (the extent to which any data are presently available), the AFGA had 135 members.[86]

The purpose of the AFGA is to help poor and sick mothers, not only in Kabul, but also in the provinces, according to its capacity. As the

Minister of Public Health, Miss Kubra Nourzai, said:

> The programme of activities of the Association deals only with the welfare and prosperity of the families; it will try to provide good guidance and useful advice to mothers in order to focus their attention to their duties, specially [sic] awareness of the importance of their health and welfare of their children, and to make them understand that the strong manpower of a country is the guarantee of its development.[87]

Mention has already been made of Afghanistan's status as a predominantly Muslim country. In a message to the AFGA, a representative of the Ministry of Information and Culture stressed that Islam is not naturally opposed to family planning:

> . . .it is quite natural for man to have children, but when he desires many children he should understand that proliferation of progeny which does not carry all those elements which are necessary for a morally sound and spiritually healthy citizen is not desirable. . . . The Family Guidance Association, which works for the amelioration of the plight of mothers and children and, thus, of families, must be resorted to by all.[88]

At present three clinics are operated by the association on two or three days of the week by doctors and nurses from the Shararah Maternity Hospital. Other staff of the association include one health educator and six family guides.[89] Prior to the AFGA program, no organized family planning activities existed anywhere in the country aside from a few IUD insertions at Shararah Hospital. Due to this lack of any structures upon which to build, clinics could not be opened immediately after the formal organization of the association.

The first clinic was opened in October 1968 at Shararah Hospital and by May 1969, 141 IUDs had been inserted, and 515 women had accepted oral pills. The second clinic, at the association's headquarters, opened in January 1969; by May there were 40 IUDs inserted and 138 acceptances of the pill. In the two months of operation for which data are available at the Bibi Mehroo

clinic which opened in April, 41 IUDs were inserted, and 49 women accepted oral contraceptives. Overall, 222 IUDs have been inserted at the three clinics, although the numbers which were reinsertions or which are *in situ* are unknown. Data are available for the number of women who were continuing or beginning use of pills in May 1969. At the Shararah clinic, 260 women were using oral contraceptives in May 1969; at the AFGA headquarters clinic, 153 women; at the Bibi Mehroo clinic, 41; the total number of women using pills was 454, of 702 one-time acceptors. The data are not yet of sufficient duration and magnitude to determine temporal trends, although the association does feel that

> . . . a reasonable conclusion that can be derived is that the demand for services offered by family guidance clinics is expected to increase considerably in the coming years and all efforts and planning would have to be directed to provide the materials and equip the clinics adequately to help them to meet the demand.[90]

The association recommends overbudgeting due to the lack of population statistics and the consequent imprecision of potential targets.

Other major activities of the AFGA are health education and training of family planning personnel. Plans for education include a weekly radio program and the production of a feature film which will discuss the advantages of a small family from the points of view of health, nutrition, and standards of living. The association has also recently issued a pamphlet on family planning, written in Persian, for mass distribution. Future plans in the area of mass education include training of family guides to perform their duties independently of the clinic, talks and demonstrations at clinics, preparation of charts and posters, production of more films, preparation of more leaflets and flyers and increased cooperation with the mass media.

During the first months of the AFGA's operation, five medical doctors were sent to Yugoslavia, the United States and Thailand for participation in seminars and meetings. A large number of fellowships for doctors, nurses, social workers and midwives were planned for 1969-70 in cooperation with USAID. Upon completion of their training, the family planning guides are expected to motivate patients in the clinics, to recruit potential acceptors in localities around the clinics and to follow up cases in order to insure a constant flow of return cases.[91]

The association has also seriously considered closer cooperation with the Women's Voluntary Workers Association, the country's only general organization for women. Founded in 1947, this group occupies its own headquarters building in Kabul where its services include adult education classes, a kindergarten, sale of women's handicrafts and showing of films. Since 1960, the women's association has also offered courses in typing (Pushtu, Persian and English), reflecting the sudden need for female secretaries and office workers.[92] Cooperation with this group would greatly aid the AFGA in spreading its message.

SUMMARY AND CONCLUSIONS

Afghanistan is clearly on the threshold of a major social and economic revolution. The government's recognition of this fact is evident from its long history of planning, even though the results of these plans, in terms of increases in per capita gross national product, have not been spectacular. The reforms introduced by the 1964 constitution and subsequent legislation (such as the Foreign and Domestic Private Investment Law) further reflect the government's desire for reasonable growth.

The lack of vital statistics and census data can only intensify the problems, as does the scattering of so much of the population in the hinterlands of the country. As the reader has probably noted, almost everything said with any degree of precision in this chapter has referred to Kabul and a few other urban centers, which in fact represent less than five percent of the country's population. The apparently significant studies made recently show that the control of various diseases will soon result in increasing rates of population growth, since if more female children survive to adulthood, there will be more potential mothers.

Therefore growth and expansion of the AFGA is a matter of primary importance. It must be assisted in the quest to reach effectively as much of the population as possible. If politically feasible, government funds should be directed toward this end. The assistance of the Ministry of Public Health has been significant thus far, and with the continued help of this ministry, knowledge of family planning and its methods can be more effectively spread throughout the country. The family planning association seems to have gotten off to a reasonably good start. Its report indicates that the members are aware of the problems facing the country and of the potential consequences of excessive population growth. With proper action and support by the government, these consequences may be avoided.

REFERENCES

1. Much of the section on physical characteristics was taken from Harvey H. Smith et al., Area Handbook for Afghanistan (Washington: Department of the Army, 1969).

2. Louis Dupree, "A Note on Afghanistan," American Universities Field Staff Reports: South Asia Series, Vol. 4 (1960). (Hereafter AUFSR:SAS)

3. Ray S. Fox, Agriculture in Afghanistan's Economy (Washington: U.S. Department of Agriculture, 1967).

4. Much of the information in the section on political history is taken from Kingdom of Afghanistan: Background Notes (Washington: U.S. Department of State, 1968).

5. See Louis Dupree, "Afghanistan's Big Gamble," AUFSR:SAS, Vol. 4 (1960); "Pushtunistan: The Problem and Its Larger Implications," ibid., Vol. 5 (1961); "India's Stake in Afghan-Pakistan Relations," ibid., Vol. 6 (1962) and "Landlocked Images: Snap Responses to an Informal Questionnaire," ibid.

6. Much of the material on the current structure of the government is from Louis Dupree, "Constitutional Developments and Cultural Change," AUFSR:SAS, Vol. 9 (1965).

7. Sidney H. Schonberg, "Reforms Are Slowly Taking Shape in Afghanistan Despite a Conservative Influence in New Parliament," New York Times, November 3, 1969, p. 28.

8. A Summary of the Sample Survey of Kabul City, 1968, p. 6.

9. 1969 World Bank Atlas: Population Per Capita Product and Growth Rates (Washington: International Bank for Reconstruction and Development, 1970), and Afghanistan: Economic Trends and Their Implications for the United States (Washington: U.S. Bureau of International Commerce, 1968), p. 2.

10. Summary of the Sample Survey, p. 7.

11. Afghanistan: Economic Trends, p. 3; see also Fox, p. 1 and Arthur V. Huffman, "The Administrative and Social Structure of Afghan Life," Journal of the Royal Central Asian Society, Vol. 38 (1951), pp. 45-46.

12. Fox, pp. 2-5.

13. Ibid., pp. 5-6.

14. Huffman, p. 46.

15. "Factories Multiply in Afghanistan," New York Times, November 2, 1969, Section I, p. 3. See also Afghanistan: Economic Trends, p. 4.

16. Afghanistan: Economic Trends, pp. 8-9; The Kabul Times Annual (Kabul: Government Press, 1967), p. 51 and Kingdom of Afghanistan, p. 5.

17. Afghanistan: Economic Trends.

18. Louis Dupree, "An Informal Talk with King Mohammed Zahir of Afghanistan," AUFSR:SAS, Vol. 7 (1963), p. 7.

19. Donald N. Wilber, Afghanistan: Its People, Its Society, Its Culture (New Haven: Human Relations Area Files Press, 1962), p. 274.

20. John Cedric Griffiths, Afghanistan (New York: Frederick A. Praeger, 1967), pp. 43-44.

21. Fox, p. 6. For a complete study on the operations of the Helmand Valley Authority, see Aloys Arthur Michel, The Kabul, Kunduz and Helmand Valley and the National Economy of Afghanistan: A Study of Regional Resources and the Comparative Advantages of Development (Washington: National Academy of Science, 1959).

22. Fox, pp. 9-10.

23. The 1958-59 to 1963-64 figures are from Griffiths, p. 145. The data for 1964-65 are from Quarterly Economic Review: Pakistan, Afghanistan, Annual Supplement, 1968 (London: The Economist Intelligence Unit, 1968). The data for 1965-66 to 1967-68 were taken from Afghanistan: Economic Trends, p. 2.

24. Agriculture in Afghanistan's Economy, p. 9.

25. Arthur Paul, "Role of Trade in Afghanistan's Development," Asia Foundation Program Bulletin, No. 29 (1963), pp. 1-4.

26. Quarterly Economic Review: 1966 and 1968.

27. See Leon B. Poullada, "Problems of Social Development in Afghanistan," Journal of the Royal Central Asia Society, Vol. 49 (1962), pp. 33-39; Wilber, pp. 272-75; Louis Dupree, "The Burqa Canes Off," AUFSR:SAS, Vol. 3 (1959) and Louis Dupree, "Aq Kuprux: A Town in North Afghanistan," ibid., Vol. 10 (1966).

28. Poullada, pp. 33-34.

29. Dupree, "The Burqa Canes Off."

30. Wilber, p. 93.

31. Kabul Times Annual, p. 4.

32. Louis Dupree, "Afghanistan: 1966," AUFSR:SAS, Vol. 10 (1966), p. 9.

33. Ibid.

34. Wilber, p. 84; Aleksandr Ivanovich Lobashev, Sel'skoe Naselenie i Sel'skoe Khoziaistvo Afghanistana v Isifrakh (Rural Population and Rural Agriculture of Afghanistan in Figures; in Russian; Moscow: Izd-vo Nauka, 1967), p. 16.

35. Wilber, p. 84.

36. Kabul Times Annual, pp. 37-38.

37. Ibid., p. 39. See also G. A. Ayeen, "Teacher Training in Afghanistan," Asia Foundation Program Bulletin, No. 13 (1959), pp. 1-3.

38. Much of the section on vocational schools and higher education is heavily indebted to Kabul Times Annual, pp. 37-42.

39. Peter G. Franck, "Problems of Economic Development in Afghanistan," Middle East Journal, Vol. 3 (1949), p. 423.

40. Kabul Times Annual, p. 47.

41. Gregory Frumkin, quoted in Michel, p. ix.

42. Afghanistan: Economic Trends, p. 2.

43. Population Program Assistance (Washington: U.S. Agency for International Development, 1969), p. 93; United Nations Demographic Yearbook, 1967 (New York: United Nations, 1969), p. 107; Gerald I. Zatuchni, "Institutionalized Maternity Care in the Developing World: A Preliminary Inquiry," Studies in Family Planning, No. 32 (1968), p. 7 and Lobashev, p. 18.

44. Area Handbook for Afghanistan, p. 58.

45. Lobashev, p. 18.

46. Zatuchni, p. 9.

47. Demographic Yearbook 1967, p. 216.

48. Lobashev, pp. 18, 21-23; Area Handbook for Afghanistan, p. 58.

49. Summary of the Sample Survey, pp. 3-4, 9.

50. Wilber, p. 66; Area Handbook for Afghanistan, p. 168.

51. ; Area Handbook for Afghanistan, p. 168; Griffiths, p. 87.

52. Griffiths, p. 8.

53. Area Handbook for Afghanistan, pp. 61-76.

54. See chapter 5 of Mary Bradley Watkins, Afghanistan, Land in Transition (Princeton: D. Van Nostrand Co., Inc., 1963).

55. Wilber, p. 67.

56. Ibid., pp. 69-74.

57. Zatuchni, p. 6.

58. "World Population Data Sheet 1966" (Washington: Population Reference Bureau, 1966).

59. Summary of the Sample Survey, p. 2.

60. "World Population Data Sheet 1968"(Washington: Population Reference Bureau, 1968).

61. Area Handbook for Afghanistan, p. 58; see also Wilber, p. 211 and James Stevens Simmons, Tom F. Whayne, Gaylord W. Anderson and Harold MacLachlan Horack, Global Epidemiology: A Geography of Disease and Sanitation, Vol. 3 (Philadelphia: J. B. Lippincott Company, 1954), p. 166.

62. See Wilber, p. 211; Ludolph Fischer, Afghanistan: A Geomedical Monograph (Berlin: Springer-Verlag, 1968), pp. 94-128 and Kabul Times Annual, pp. 49-51.

63. Wilber, p. 34.

64. For example, see Fischer; Simmons et al., and J. C. Cutler, "A Survey of Venereal Diseases in Afghanistan," Bulletin of the World Health Organization, Vol. 2 (1950), pp. 689-703.

65. Fischer, pp. 111, 137. See also Simmons et al., p. 172.

66. Fischer, p. 112.

67. Simmons, et al., p. 172.

68. Fischer, pp. 116-17.

69. Ibid., p. 124.

70. Ibid., p. 101.

71. Wilber, p. 212.

72. Ibid., p. 213.

73. Kabul Times Annual, p. 49. See also Fischer, pp. 95-102 and Simmons et al., pp. 174-75.

74. Kabul Times Annual, pp. 50-51.

75. Afghan Family Guidance Association, First Annual Report (Kabul: Education Press, 1969), p. 27.

76. Fischer, p. 93.

77. Ibid., pp. 113-14.

78. Ibid., pp. 87-88.

79. Wilber, p. 213; Kabul Times Annual, p. 40.

80. Fischer, pp. 88-90.

81. Ibid.

82. Afghan Family Guidance Association, pp. 1-4, 28-32,

83. See Olivia Schieffelin, ed., Moslem Attitudes Toward Family Planning (New York: The Population Council, 1967), pp. 1-12, 15-26.

84. Wilber, p. 35.

85. Ibid.

86. Afghan Family Guidance Association, pp. 1, 9, 20.

87. Ibid., p. 1.

88. Ibid., pp. 3-4. See also Schieffelin.

89. Afghan Family Guidance Association, pp. 10-11.

90. Ibid., pp. 11-13.

91. Ibid., pp. 15-16.

92. Wilber, p. 215.

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POPULATION PROBLEMS AND PROSPECTS IN IRAN

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A COUNTRY OVERVIEW

Physical characteristics

Located in the northern temperate zone, between 44° and 63° east longitude and 25° and 40° north latitude, Iran is bounded on the north by the Soviet Union (a 2,675 kilometer border), on the east by Afghanistan and Pakistan (a 1,760 kilometer border), on the south by the Persian Gulf and the Sea of Oman (roughly 1,830 kilometers) and on the west by Iraq (a 1,155 kilometer border) and Turkey (a 410 kilometer border).

Iran has an area of 1,648,000 square kilometers, or 636,293 square miles, of which nearly 25 percent is cultivable, although only 13 percent is currently being used. Of the remaining land, about a third is forests and high mountains, and another third is desert. Topographically, Iran is part of a plateau extending from Turkey on the west to Afghanistan and Pakistan on the east with an average altitude of 1,000 meters. Two important mountain formations divide the country into several different topographical zones. The Elburz Range runs across the northern border of the country from west to east, and the Zagros Range runs from the northwest to the southwest. The narrow Caspian Plain in the north, the central plateau which includes two important deserts of the country and the littoral areas of the south are formed by these mountain ranges.

The climate of the country differs in the various areas. On the Caspian shore, the climate is mediterranean, with an annual precipitation of from 70 centimeters in the east to nearly 100 centimeters in the west. The foothills of this area are covered by thick forests, and on the plain are grown tea, rice and many other agricultural products. The central plateau has dry weather and a clear sky. On the Lut Desert, annual precipitation may be almost zero. Cities and towns around the two deserts have very hot, dry summers.

Political history

Historical sketch: Iran's political history is distinguished by unsettled conditions and by many short-lived dynasties which were not able to hold the country together for any length of time. Aryan tribes entered what is now Iran around the fourteenth century B.C. and settled in the western parts of the plateau. By the sixth century B.C. these tribes dominated all the ancient governments of western Asia and established the Medes and Achaemenian dynasties. Cyrus the Great, the founder of the Achaemenian dynasty, extended his territories from India to the Sahara and established the Persian Empire. However, the Achaemenians were defeated in 330 B.C. by Alexander the Great, whose successors ruled the country for more than two hundred years. The Parthans ruled until A.D. 226 when they were replaced by the Sasany dynasty. During this period, Iran once again became a great empire in western Asia. In the seventh century the country was occupied by Arabs and the national religion was changed from Zoroastrianism to Islam.

Two hundred years later, in the ninth century, scattered rebellions broke out in the country, and the rule was seized by several dynasties, one

quickly following the other. The Mongols invaded in the thirteenth century. During the rule of Shah Abbas the Great, Iran returned to a position of power, but it was impossible for the Shah's successors to maintain this level. Until the appearance of the Qajar dynasty the history of the country continues to enumerate many local wars and feudal governments. Finally, in the early years of the twentieth century, knowledge about governments of the European countries led the Iranians to the Constitutional Revolution, and Iran became a constitutional monarchy.

Current structure: The fundamental law of 1906 and its supplement of 1907 and later amendments--the first of which transferred the reign from the previously ruling dynasty (Qajar) to the ruling dynasty of Pahlavi--laid the foundation for the present system of government in Iran.

The constitution as it now exists provides for a parliament composed of the upper house (Senate) and lower house (Majlis). The Senate is composed of 60 senators, 30 of whom are elected by the public; the remaining 30 are appointed by the Shah. Teheran is represented by 30 senators (15 elected and 15 appointed) and the provinces by a similar division. The term of the Senate is four years. The principal legislative body is the Majlis which has, among other exclusive rights, complete power over budgetary matters of the state. At present, the Majlis consists of more than 220 deputies who serve four-year terms. Depending on population increase and census figures, additional deputies can become members of the Majlis. The Shah appoints the prime minister, but this appointment must be ratified by both houses of parliament. Under the present constitutional monarchy, the Shah is empowered to dissolve one or both houses of parliament. If parliament is dissolved, however, new elections must be held within one month and the new house inaugurated within three months.

The country is divided into 15 Ostans (provinces), the largest civil division in Iran, and seven Farmandary-Kols (chief gubernatorial regions). The Ostans are headed by governor-generals and the Farmandary-Kols by chief governors, all nominated by the Ministry of Interior and appointed by the Shah.

SOCIAL AND ECONOMIC SITUATION

Economic history

Agricultural reform: The concentration of productive land in the hands of relatively few owners, many of whom were absentee landlords, coupled with outmoded farming methods and a reluctance to improve existing properties, resulted in a very poor agricultural output over the years so that the yield of crops was at the minimum level. The initiative in the program of putting land into the hands of individual peasants so that they could work independently of landlord control came in 1954. In 1962, the Land Reform Organization began a widespread campaign of land redistribution by purchasing villages from landlords and giving them to individual peasants on a long-term basis. The first phase of land reform was completed in 1969.

Despite the fact that agricultural output accounts for the largest share of production in Iran, except for cotton and some fruits and nuts, the production is less than the consumption. Wheat is the most important agricultural crop, with a yearly yield averaging about 2.8 million tons. Because of outdated methods, lack of enough fertilitzers and insufficient water, wheat has not advanced as much as some other agricultural products, and in years of drought, Iran has had to buy the grain from other countries. Rice, cotton and sugar beet production has made remarkable advances in recent years. Cotton is one of the most important export materials of the country, the others being oil and carpets.

Industrialization: Prior to 1925, with the exception of a small sugar refinery and scattered primitive metalworking facilities, the industry of Iran consisted of hand labor enterprises such as rug and silk weaving. From 1925 to 1940, at the time of Reza Shah, state enterprises were formed to produce goods from the country's indigenous, agriculturally-based resources. Light industries such as textiles were set up in some cities of north and central Iran. The sugar beet was introduced into the country, and eight state-owned refineries were constructed in various parts of Iran. A number of state-owned light industrial enterprises were begun to manufacture soap, glass, matches and cigarettes. World War II slowed the development of the industries, but after the war the oil revenue on the one hand and foreign economic aid on the other helped to initiate a true industrial revolution in Iran. The major portion of Iran's industrial expansion was devoted to textile and food processing. Only recently have new industries been inaugurated, such as plastics, rubber products, pharmaceuticals, glass bottles, chemical fertilizers, construction materials, metal goods, consumer appliances as well as heavy industries such as steel mills and machinery. At the present time, less than 50 percent of the invested capital in industry is used for food processing and textiles. The basis of the economy is oil, a fact which will be true for one or two decades to come.

Urbanization: The establishment of most Iranian cities is related to religious, political and commercial factors, but it is only recently that the rapid growth of industry has attracted migrants from rural areas to urban centers. Teheran and some other cities have grown considerably as a result of industrial development.

Twenty-seven cities of over 50,000 population accommodate 70 percent of the urban population. About 15 percent of urban dwellers live in the 35 cities

of 25,000 to 50,000 population, and 29 percent live in cities with 10,000 to 25,000 inhabitants (64 cities). Fourteen cities in Iran have populations exceeding 100,000.

Changes in gross national product (GNP)

The trend of the GNP in Iran is shown in Table 1. The oil sector's share of the GNP was 20 percent in 1963; commerce took 20.6 percent; agriculture, 27.3 percent; and industrial production, 12.6 percent. For more recent years, the gross national product shows much higher figures, partly because of the boom in the economy of the country effected by widespread industrialization and partly because of inflation.

Employment

According to the census figures in 1956, of the 12.8 million people over ten years of age, 47.5 percent--six million--were members of the labor force. In 1966, 45.9 percent of the 15.5 million people ten years of age or older were economically active. The percentages of those who are active differs by age and sex. In 1966, 77 percent of the male population and 12.5 percent of the female population were employed. Ninety percent of men aged 20 to 55 and more than 97 percent of men aged 30 to 44 were active. Thus, the rate of activity of men increases with age, while for women, the rate of activity decreases with age. For example, in the age group of women ten to 14 years of age, 14.2 percent were employed, in the 15-19 age group, 15.5 percent and in the 25-29 age group, 12.7 percent were economically active.

Women are more involved in economic activities in rural areas because of local handicrafts and participation in some agricultural labor such as rice growing in the northern part of the country.

Table 1

Gross National Product and Per Capita Income at Current Prices, 1959-64

Year	Gross National Product (billions of rials)*	Per Capita Income (rials)	Per Capita Income (dollars)
1959	303.8	13,267	176
1960	338.6	14,438	192
1961	357.0	14,802	197
1962	363.7	14,710	196
1963	382.6	15,063	200

*1 rial = U.S. 1.4¢

Source: Bank Markazi (Central Bank of Iran)

Early employment is a prevalent phenomenon in Iran. According to the 1966 Census, 25 percent of the 10-14 age group of both sexes were employed; among males of that age group, the percentage increases to 35.9. In villages, about half of the male population aged ten to 14 (49.2 percent) have to work instead of going to school. If the employment of a large number of children even younger than ten years in many of the rural areas is taken into account, the impact of early employment becomes more dramatic. Fortunately, increasing urbanization is an effective factor in decreasing early employment.

Women who are employed are a very small portion of the female population, only 12.5 percent in 1966. One reason for this figure is under-enumeration of housewives who participate in rural agricultural activities, but who are not included in the labor force.

Table 2 shows labor force distribution by type of occupation. Although the majority of workers is involved in agriculture, the percentage engaged in industry is increasing because of the wave of rural-urban migration that is frequently accompanied by a change in occupation from agriculture to industry.

Education

Table 3 shows the number of schools and the number of pupils in the 1970-71 school year. More than 40,000 students attend centers of higher education and universities, bringing the total number of students to about 4,530,000, which is more than 15 percent of the population of the country. Although noticeable progress has been made, the rate of increase in the number of school-age children is very rapid. A good proportion of the children of school age, especially in rural areas, have no chance to attend school. To relieve the extent of illiteracy a plan called "literacy corps" has been

Table 2

Distribution of Labor Force
by Type of Occupation, 1956 and 1966

Type of Occupation	Percent of Labor Force 1956	1966
Agricultural workers	58.5	49.3
Industrial workers	20.0	24.9
Shopkeepers and traders	6.4	8.4
Services	6.5	6.3
Managers and administrators	3.3	3.3
Professionals	1.4	2.8
Not stated	3.9	4.8

Table 3

Number of Schools and Enrollment, 1970-71

Type of School	Number of Schools	Number of Students
Kindergarten	349	19,308
Elementary (including literacy corp)	25,758	3,415,650
Secondary	2,509	1,012,920
Technical	79	5,926
Total	28,695	4,453,804

introduced. The literacy corps is a type of military service which sends high school graduates to teach reading and writing to the population of rural areas, including the children. In 1971, 16,099 members of the literacy corps (12,656 men and 3,443 women) were active in the villages.

Large economic projects

In the Fourth Five-Year Plan, the government of Iran decided to use most of the development budget (derived mainly from oil revenue) to establish heavy industries so that after some years the economy of the country could be balanced without oil revenue. The most important project is the steel mill enterprise in the central part of the country, 50 kilometers west of Isfahan, which was built by the Russians in exchange for natural gas from Khuzistan. Two large engine making factories are under construction in Arak (central province) and in Tabriz in east Azarbaijan. With the aid of American capital, an aluminum factory is being built in Arak that, when operating at full capacity, will meet the needs of Iran, Pakistan and Turkey. A copper mine in the southeast which will be built with the help of British investors is expected to become one of the most important sources of copper in the world because of the extraordinary amount of ore in the area.

The agricultural policy being implemented at present is to increase the land under cultivation, to increase the crop yield and to introduce new agricultural crops. Agricultural centers are developing in Gorgan in the northeast, Moghan in the northwest, Khuzistan in the southwest and Jiroft in the southeast. It is hoped that after a decade these industrial and agricultural centers will be able to absorb about 10,000,000 of the population of the country.

DEMOGRAPHIC SITUATION

Population trends

The population of Iran, like that of several other developing countries, is growing very rapidly and will continue to do so unless effective voluntary checks are instituted in the immediate future. Such a phenomenon is symptomatic of the contemporary demographic transition through which Iran is now passing and has resulted from a substantial decline in mortality while fertility has been sustained at a high level and may actually have improved.

Unfortunately, long-term population trends for Iran cannot be established. Prior to 1956, all the information on population size in Iran is inaccurate, being mainly guesswork. Estimates that are available for the early period are conflicting. Even the United Nations estimates are inconsistent, as illustrated by Table 4. Relatively more accurate data became available through two national censuses and two sample surveys. The first national census was taken in November 1956 and showed the total population to be 18,954,704. In 1959 a sample survey estimated the population at 19,862,665; the figure given by another sample survey (Manpower) in 1964 was 22,291,239. The second national census taken in 1966 counted a population of 25,788,722, excluding the mobile population. It is estimated that by the end of 1972 the population of the country will reach 30 million.

Growth rate: Using the two national censuses, the annual intercensal growth rate of the Iranian population is calculated to be about 3.2 percent, which is one of the highest in the world. Possibly this rate may be overestimated because in 1956 the census omitted certain population groups (about 400,000 people) that were later covered by the 1966 census. A more reasonable rate of growth is 2.9 percent, still extremely high. It is assumed

Table 4

United Nations Estimates of Population of Iran* 1941-55

Year	1951 Estimates (thousands)	1955 Estimates (thousands)	1956 Estimates (thousands)
1941	16,123	-**	-
1942	16,246	-	-
1943	16,307	-	-
1944	16,610	-	-
1945	17,073	-	-
1946	17,407	-	-
1947	17,735	-	-
1948	18,092	-	-
1949	18,388	18,466	-
1950	18,772	18,952	19,612
1951		19,328***	19,991
1952		19,803****	20,366
1953		20,253	20,868
1954		20,721	21,331
1955			21,794

*Prior to 1949, estimates are of population on March 21; after 1949 estimates are for July 1 population.

**Estimates which are consistent with earlier figures are not repeated.

***The 1952 Demographic Yearbook gives 19,140,000 as the 1951 population.

****The 1953 Demographic Yearbook gives 19,519,000 as the 1952 population.

Sources: United Nations Demographic Yearbook, 1951 (New York: United Nations, 1952), p. 125; United Nations Demographic Yearbook, 1955 (New York: United Nations, 1955), p. 121; United Nations Demographic Yearbook, 1956 (New York: United Nations, 1956), p. 157.

that because of the continued decline in mortality, the annual growth rate between 1966 and 1971 was even higher and may have ranged from 3.3 to 3.5 percent. The rate may continue at this level for some time until fertility begins to decline. If fertility is sustained at this level the population will double in 20 years or less.

Population density: The average population density in 1956 and 1966 for Iran is deceptively low, only 12 and 15.4 persons per square kilometer, respectively. But as might be expected, the density varies greatly from one place to another, being determined primarily by the terrain, availability of water, and industrial and urban development. An examination of the figures provided by the 1966 census reveals that the north and north central provinces accounted for over 43 percent of the population, although they represent only 20 percent of the land area of the country. The highest population density, as shown in Table 5, was in the capital city of Teheran (253 persons per square kilometer). The lowest population density was in the province of Sistan and Baluchistan, two persons per square kilometer. When the arable land was used as the denominator, population density was 118 persons per square kilometer. The most extreme pressure felt due to a rapidly growing population is experienced in increasingly congested cities where sanitary services, housing, roads and highways and other public services cannot be provided at a rate which will keep up with the demands of population growth.

Population composition

Age composition trends:* The population of Iran is predominantly young, a characteristic of most developing countries, with medium life expectancy

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*A demographic footnote is important in regard to age composition. The relative under-reporting of certain age groups and the tendency during census taking to roundoff ages to the nearest five or zero causes the data to be of doubtful reliability. Age reporting may have improved in 1966, however.

Table 5

Population Density per Square Kilometer
1966 Census Figures

Area	Density
Entire country	16
Arable land	118
Central province	44
Along Caspian Sea	20-30
Azarbaijan	36
Sistan and Baluchistan	2
City of Teheran	253
Abadan	170
Tabriz	52
Kashan	10
Kerman	4

Source: R. Keyhan, Population of Iran: Socio-Economic Implications (Teheran: Ministry of Health Family Planning Unit), p. 4.

(around 45 years in 1956 and 51 years in 1966). The population pyramids in Figure 1 document this statement by showing a relatively wide base with gradual tapering off towards the older age groups. The population in 1966 was even younger with a much wider base than in 1956. For example, the proportion of the population in the 0-14 age group was 42.2 percent in 1956 and became 46.3 percent in 1966.

Dependency ratio: A measure of the economic burden imposed on the community by those who are too young (0-14) or too old (65+) to be economically productive is the dependency ratio. For Iran, the youth dependency ratio in 1956 was 78.3 children for every hundred persons in the economically active age group of 15 to 64, and the old dependency ratio was 7.4 elderly persons for each hundred economically productive persons, giving a total dependency ratio of 85.7. In 1966 the old dependency ratio had increased only slightly to 7.7, but the youth dependency ratio increased to 92.1, enough to bring the total to 99.8, as compared with 66.9 for the United States in the same year. This high dependency ratio will continue to increase in Iran as long as fertility remains high. For example, in 1976 the projected old dependency ratio is 8.1, the youth dependency ratio is 108.30, and the total rises to 116.4. The pattern of increase so far has been comparable in both urban and rural areas.

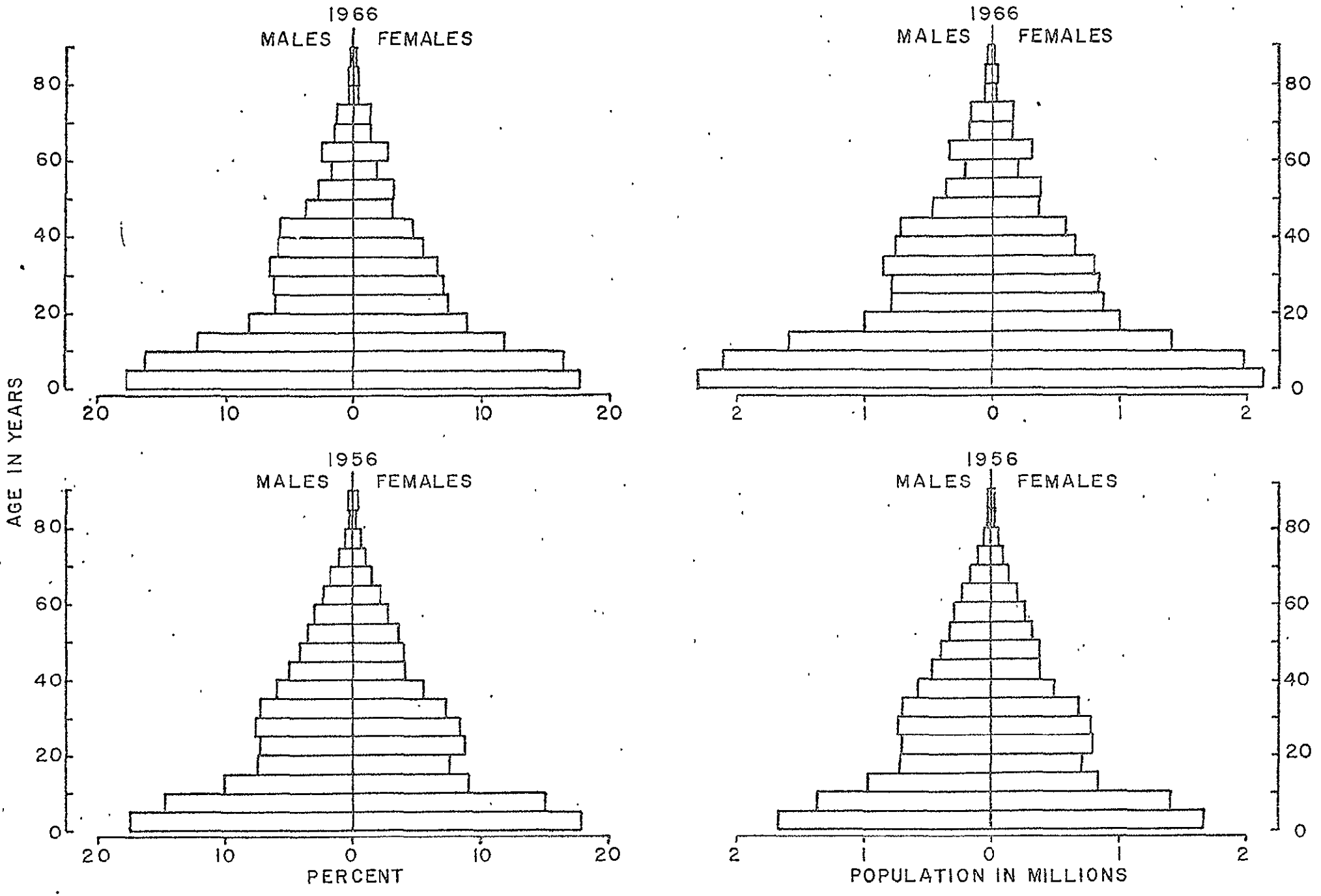
In contrast to the very high dependency ratio, the proportion of the population in the productive age group of 15 to 64 declined from 53.8 percent in 1956 to 50 percent in 1966.

Sex composition trends: A unique feature of Iran's population is a relatively high male/female ratio, 103.6 in 1956 and 107.3 in 1966. The ratio is higher in rural than in urban areas for both years and differs by age, being relatively high for the zero to 14 and over 45 age groups.

Figure 1: Population Pyramids for Iran

Source: Drawn from data in United Nations Demographic Yearbook, 1963 (New York: United Nations, 1964) and United Nations Demographic Yearbook, 1969 (New York: United Nations, 1970).

POPULATION PYRAMIDS FOR IRAN



There may be an element of differential reporting by sex, however, with the females being more under-reported than males. Table 6 shows male/female ratios by age for 1956 and 1966.

Ethnic and religious composition and trends: Ethnic groups in Iran are divided officially on the basis of religion. Table 7 shows the population of the country by religion for 1956 and 1966. More than 98 percent of the people are Muslims; most belong to the Shi'ite sect, which is similar to the situation in Iraq and Lebanon. Within the Muslim population of Iran are several different ethnic groups distinguished from each other by their languages. The most important is the Persian-speaking group, including the Farsi-speaking people (the majority), Guilakys and Mazandaranys in the north, Kurds in the west, Lurs in the southwest and Baluches in the southeast; Turkic-speaking people are predominant in the two provinces of Azarbaijan in the northwest and Turkmen in the northeast; finally, less than 400,000 Arabic-speaking people live in the southwest. In all religious groups except Zoroastrians there are more males than females, especially in urban areas. This was true for both the 1956 and 1966 censuses.

Urban-rural distribution: According to the census of 1956, 18.9 million people were counted in the entire country, 13 million in rural areas and only 5.9 million in urban centers. In 1966, the census showed that the total population had reached 25.8 million with 9.8 million in urban areas. One third of the urban population was living in the capital city of Teheran, which is not only the political and administrative center but also the main location of industrial and commercial enterprises. The latest estimate of the population of Teheran is 3.5 million; it was 2.7 million in 1966. Other large cities of the country are sites of new industrial enterprises that attract thousands of people from smaller towns and rural areas.

Table 6

Male Female Ratios by Age, 1956 and 1966

Age Group	Male Female Ratios 1956	1966
0- 4	101	108
5- 9	101	107
10-14	115	112
15-19	100	99
20-24	88	89
25-29	94	94
30-34	103	107
35-39	114	117
40-44	125	126
45-49	108	132
50-54	103	100
55-59	111	109
60-64	115	106
65-69	112	120
70-74	109	109
75-79	104	125
80-84	99	104
85+	112	105

Source: Calculated from data in United Nations Demographic Yearbook, 1963 (New York: United Nations, 1964) and United Nations Demographic Yearbook, 1969 (New York: United Nations, 1970).

Table 7
Population by Religion, Sex and Urban-Rural Residence, 1956 and 1966

Religion	Total Country				Urban Areas			Rural Areas		
	Percent of Population	Total	Male	Female	Total	Male	Female	Total	Male	Female
					1956 CENSUS					
Total		18,954,704	9,644,944	9,309,760	5,953,563	3,070,149	2,883,414	13,001,141	6,574,795	6,426,346
Muslim	98.5	18,654,127	9,492,588	9,161,539	5,787,474	2,991,290	2,796,184	12,866,653	6,501,298	6,365,355
Jewish	0.3	65,232	33,434	31,798	46,680	22,835	23,845	18,552	10,599	7,953
Zoroastrian	0.1	15,723	7,498	8,235	9,084	3,992	5,092	6,639	3,506	3,133
Christian	0.6	114,528	57,935	56,593	61,557	27,717	33,840	52,971	30,218	22,753
Armenian	-	-	-	-	-	-	-	-	-	-
Assyrian	-	-	-	-	-	-	-	-	-	-
Other Christian	-	-	-	-	-	-	-	-	-	-
Other	0.3	59,256	30,331	28,925	31,083	15,545	15,538	28,173	14,786	13,387
Unstated	0.2	45,838	23,158	22,680	17,685	8,770	8,915	28,153	14,388	13,765
					1966 CENSUS					
Total		25,078,923	12,981,665	12,097,258	9,794,246	5,096,654	4,697,592	15,284,677	7,885,011	7,399,666
Muslim	98.8	24,771,922	12,825,856	11,946,066	9,533,953	4,964,746	4,569,207	15,237,969	7,861,110	7,376,859
Jewish	0.2	60,683	31,004	29,679	58,821	30,140	28,681	1,862	864	998
Zoroastrian	0.1	19,816	9,363	10,453	16,328	7,839	8,489	3,488	1,524	1,964
Christian	0.6	149,427	76,015	73,412	128,433	65,021	63,412	20,994	10,994	10,000
Armenian	0.4	108,421	55,427	52,994	93,286	47,647	45,639	15,135	7,780	7,355
Assyrian	0.1	20,344	10,241	10,103	15,980	8,002	7,978	4,364	2,239	2,125
Other Christian	0.1	20,662	10,347	10,315	19,167	9,372	9,795	1,495	975	520
Other Unstated	0.3	77,075	39,427	37,648	56,711	28,908	27,803	20,364	10,519	9,845

Sources: Census of 1956, Vol. 2 and Census of 1966, Vol. 168.

Rural-urban migration is expected to increase considerably in the coming years because of the "pull factor" of employment possibilities in large cities.

Vital rates

Registration of births and deaths in Iran is not complete, especially in rural areas and among the mobile population. Most of the available data are either estimates or data based on sample surveys. Students of population, both Iranian and non-Iranian, have maintained that the level of fertility in Iran must be very high while that of mortality is declining.

Birth rate trends: In 1963 the United Nations estimated the birth rate in Iran for the period 1946-51 to be 48 births per thousand population with a corresponding gross reproduction rate of 3.1. These estimates were obtained by the "reverse-survival" method, from the number of children five to nine years of age enumerated in the 1956 census.[1]

In estimating the gross reproduction rate, the age pattern of fertility still unknown for Iran was assumed to be similar to the pattern shown by birth registration statistics for health bureau localities in Egypt. The reliability of the estimates is not great, but they are among the best that can be made using the defective data.

A few sample surveys support these estimates. Mashayekhi, Mead and Hayes conducted a survey in 1950 in every fifth household in 173 villages of the agricultural region immediately southwest of the city of Teheran.[2] The observed birth rate was 51.4 per thousand population. The investigators argued that this rate is understated for two reasons: (1) The survey depended on an interview with a woman. Only those women who survived could be interrogated; thus live births to women who died prior to the survey were excluded. (2) Undoubtedly some live births escaped the mother's

memory. The survey also estimated that the general fertility rate was 242.9 live births and the child/woman ratio was 808.6 children 0-4 years (both per thousand women 15 to 44 years of age) and that the gross reproduction rate was 3.97 (number of female children per woman).*

In 1956 the Institute for Social Studies and Research of the University of Teheran, with the cooperation of the School of Public Health and Institute of Public Health Research of the University of Teheran, performed a survey of the fertility of married women in four different rural areas (north, northwest, east and south of Iran) and in Teheran. Table 8 shows the results of this survey.

A more recent survey was carried out in 1965 by the Institute for Social Studies and Research of the University of Teheran in 284 villages in the Kazeroon district.[3] Among the preliminary results are the following: (1) In 1964 the average size of households in the sample villages was 5.7. (2) The average age of the married women was 20 years, and each married woman in the survey had become pregnant 5.02 times, on the average. Those who reached the age of 49 years had experienced 8.61 pregnancies. Of these women, 84 percent had been married before their twentieth birthday. The high fertility revealed in this survey was to an extent neutralized by a high infant and childhood mortality, calculated as 198 deaths per thousand live births for 1964 in the surveyed population.

In still another survey, differential family size (number of living children) was reported to be related to religion and social status.[4] The study was carried out in 1955 using all 18,739 Iranian employees of the Iranian Oil Exploration and Producing Company as subjects. The family size of the Muslims was somewhat higher than that of Christians of the same working classification, especially among those ranked as "staff."

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*The data were insufficient to calculate the net reproduction rate.

Table 8

General Fertility Rates Among Women in Rural Areas and in Teheran, 1956

Age Group	Rural Areas	Teheran
15-19	316	330
20-24	360	360
25-29	357	240
30-34	295	170
35-39	227	150
40-44	150	60
15-44	295	210

Among the Muslim employees, family size of staff was higher than that of the skilled workers, while the reverse was observed among the Christians. The results of this survey cannot be accepted as definitive for several reasons. The size of the Christian sample was too small in comparison with that of the Muslims. For example, the number of the Ostadakar (foremen) was 69 for the Christians and 1,254 for the Muslims. The comparable figures for unskilled laborers were 18 Christians and 2,653 Muslims. The fact that other studies have demonstrated higher Muslim fertility is not sufficient reason to accept the survey results. Within each group the size of the family may be a function not only of a higher fertility but also of a better survival of children, a consideration which may explain the larger family size of Muslim staff as compared to Muslim foremen. Further and more careful investigation of differential fertility is much needed in Iran.

According to the 1966 census the general fertility rate for the whole country is 256 per thousand. This rate is lower for urban areas (228 per thousand) and is higher for rural areas (274 per thousand). The fertility rate may actually be 316 per thousand for the whole country, 299 per thousand for urban areas and 327 per thousand for rural areas.

The United Nations in 1971 in a report for the government of Iran used for its deliberations a birth rate of 46 per thousand population for the year 1966. This figure is an average for the whole country; in some areas the birth rate may be higher than 50 per thousand. The UN also estimated a gross reproduction rate of 3.3 and a total fertility ratio of 6.8.[5] These may be minimum figures; the true crude birth rate may actually lie between 47 and 49 births per thousand population, which is close to Behnam's estimate of 50 for the whole country, 48 for urban areas and 42 for rural ones.

Death rate trends: No accurate information is available on the level of mortality in Iran. The more acceptable estimates put mortality at 25 deaths per thousand population prior to the 1950s and about 18 to 20 per thousand thereafter. In 1960 in Teheran, infant deaths (under one year of age) accounted for about 40 percent of all deaths. Sample surveys present the following estimates of infant deaths:

Year	Survey Area	Observed Death Rate (deaths per thousand live births)
1950	Shahriar	217
1955	Sabzevar	188
1958	Shiraz	120
1965	Kazeroon, Shahsavar, Hashtroud and Torbat	196

According to the Institute for Social Studies and Research, the estimated rate of infant mortality is 101 deaths per thousand live births in urban areas, 162 in rural areas and 139 in the country as a whole.

Migration trends: Migration is a significant and dynamic factor which affects the number and distribution of the population in any given area of Iran. Many factors may cause people to move from one place to another. According to the United Nations demographic dictionary, "in the absence of catastrophic events, the movements of people from one area to another are primarily the direct result of inadequate economic and social opportunity in the area of emigration and superior opportunity in the areas of immigration."[6]

The following are some characteristics of migration in Iran:

1. The direction of migration in Iran is primarily from rural to urban, especially to the capital. Available statistics show that a high percentage of the population of urban centers were born outside the city. For example, 49 percent of the population who live in Teheran were not born there.

Migration may explain a large part of the significant increase in urban population which has had a striking effect on the urban centers, both demographically and socially. For example, the population of Teheran increased 80 percent between 1956 and 1966.

2. The migrants carry with them their fertility pattern but benefit from the better circumstances in the urban environment that reduce mortality. Hence they contribute to the growth of cities not only by their own numbers but also by their high fertility and declining mortality.

3. Migrants may also affect the population composition since they are predominantly young, fertile males.[7]

In addition to the usual migratory patterns, Iran also has nomadic and tribal segments which show higher rates of mobility. Table 9 gives counts of the settled and unsettled population by province. The percent of unsettled population ranges from zero in certain communities to 30.4 percent in Ilam Farmandarikol. Tribal population is divided among different tribal ethnic groups, settled mostly in the southern and southwestern parts of the country. According to the census figures, the tribal population of the country is 462,146, but the number is probably much higher. A great part of the tribal population has been counted as settled population of rural areas. The usual estimate is about 2,000,000. Each tribe consists of several sects (Tayefeh) and each sect, of several segments (tireh), the smallest tribal group comparable to a village and composed of several tribal households. By definition, a tribal household comprises all the individuals of the tribal segment who share their principal meals and live in the same tents.

Rate of natural increase: Because of the variability of estimates of the birth and death rates, the rate of natural increase cannot be accurately fixed. It may range between 2.6 and 3.2 for 1951 and 1971, respectively.

Table 9

Total, Settled and Unsettled Population for Ostans and Farmandary-Kols, November 1966

Ostan or Farmandary-Kol	Total Population	Settled Population	Mobile Tribal Population	Unsettled Population	Proportion of Unsettled Population to Total
Total	25,788,722	25,078,923	462,146	247,653	2.8
Ostans					
Central	4,984,828	4,979,081	-	5,747	0.1
Guilan	1,755,432	1,752,504	-	2,928	0.2
Mazandaran	1,845,270	1,841,637	-	3,633	0.2
West Azerbaijan	2,636,089	2,596,439	29,775	9,875	1.5
East Azerbaijan	1,087,411	1,087,182	-	229	0.0
Kermanshahan	818,685	776,409	28,878	13,398	5.2
Khuzistan	1,706,758	1,578,079	89,734	38,945	7.5
Fars	1,584,539	1,439,804	121,831	22,904	9.1
Kerman	841,982	761,851	69,279	10,852	9.5
Khorassan	2,520,779	2,497,381	2,253	21,145	0.9
Isfahan	1,705,617	1,703,701	-	1,916	0.1
Sistan and Baluchistan	502,626	454,996	-	47,630	9.5
Kurdistan	619,700	619,573	-	127	0.0
Farmandary-Kols					
Hamadan	889,892	889,888	-	4	0.0
Chahar-Mahal and Bakhtiari	301,359	298,448	783	2,128	1.0
Lorestan	767,374	686,307	75,578	5,489	10.6
Ilam	213,011	148,307	11,074	53,630	30.4
Bovir-Ahmadi and Kohkiluyeh	190,542	161,219	25,624	3,699	15.4
Ports and Islands of Persian Gulf	259,101	251,921	4,366	2,814	2.8
Ports and Islands of Sea of Oman	349,820	346,410	2,971	439	1.0
Semnan	207,907	207,786	-	121	0.1

Marriage

The censuses of 1956 and 1966 present statistics on the marital status of the population which make it possible to estimate the two main factors regarding marriage, intensity and precocity.

A good indication of the intensity of marriage is the percentage of unmarried persons at the age of 50. In Iran, this figure is very small in comparison with the industrial countries; particularly in the rural areas, most people at age 50 have been married. The percentage of unmarried persons is smaller for women than for men.

Another aspect of marriage in Iran is the precocity, or relatively early age of marriage. Table 10 shows both the percentage of married persons in the 15 to 19 age group and the intensity of marriage by sex.

Population projections

The United Nations calculated four population projections for Iran, one assuming constant fertility and the other three assuming high, medium and low growth rates.[8] Of these, the constant and low projections are of prime significance since the first assumes no change in fertility and the second assumes the most rapid possible rate of fertility decline. Both the constant and the low projections are given in Table 11 and Figure 2. According to these projections, the Iranian population with an almost constant birth rate, fluctuating around 46 per thousand population would reach 85.5 million in the year 2000. During this period the growth rate (rate of natural increase) would increase from 2.8 percent in 1965 to 3.9 percent in 1995, due to a mortality rate that would decline from 17 deaths per thousand population in 1965 to seven per thousand in 1995. On the other hand, if the birth rate somehow drops to 27 per thousand in 1995 with the same mortality trend, the growth rate would decline from 2.8 to 2.0,

Table 10

Intensity and Precocity of Marriage by Sex and Region

1956 and 1966

	Male			Female		
	Total	Urban	Rural	Total	Urban	Rural
Intensity (Percent unmarried at age 50)						
1956	4.0	4.6	3.6	1.2	1.7	0.9
1966	1.3	1.6	1.1	0.8	1.2	0.5
Precocity (Percent married in 15-19 age group)						
1956	7.0	-	-	41.0	-	-
1966	6.0	4.0	8.0	47.0	41.0	52.0

Table 11

United Nations "Constant Fertility" and "Low" Population Projections, 1965-2000

		1965	1970	1975	1980	1985	1990	1995	2000
Gross Reproduction rate	C*	3.4	3.4	3.4	3.4	3.4	3.4	3.4	--
	L	3.4	3.2	2.95	2.65	2.3	1.95	1.65	--
Total fertility ratio	C	7.0	7.0	7.0	7.0	7.0	7.0	7.0	--
	L	7.0	6.6	6.0	5.4	4.7	4.0	3.4	--
Crude birth rate	C	45	46	47	48	47	47	46	--
	L	45	44	41	39	35	31	27	--
Crude death rate	C	17	16	14	12	10	8	7	--
	L	17	16	14	12	10	8	7	--
Population growth rate (percent)	C	2.8	3.0	3.3	3.6	3.7	3.9	3.9	--
	L	2.8	2.8	2.7	2.7	2.5	2.3	2.0	--
Stable population growth rate** (percent)	C	4.2	4.2	4.2	4.2	4.2	4.2	4.2	--
	L	4.2	3.9	3.6	3.2	2.7	2.2	1.5	--
Population (millions)	C	24.5	28.4	33.3	39.7	47.7	57.7	70.0	85.5
	L	24.5	28.2	32.6	37.4	42.8	48.1	53.4	58.7
Births (thousands)	C	1,103	1,306	1,565	1,906	2.242	2,712	3,220	--
	L	1,103	1,241	1,337	1,459	1,498	1,491	1,442	--
Difference (thousands)	C	0	65	228	447	744	1,221	1,778	--

*C = Constant Fertility; L = Low

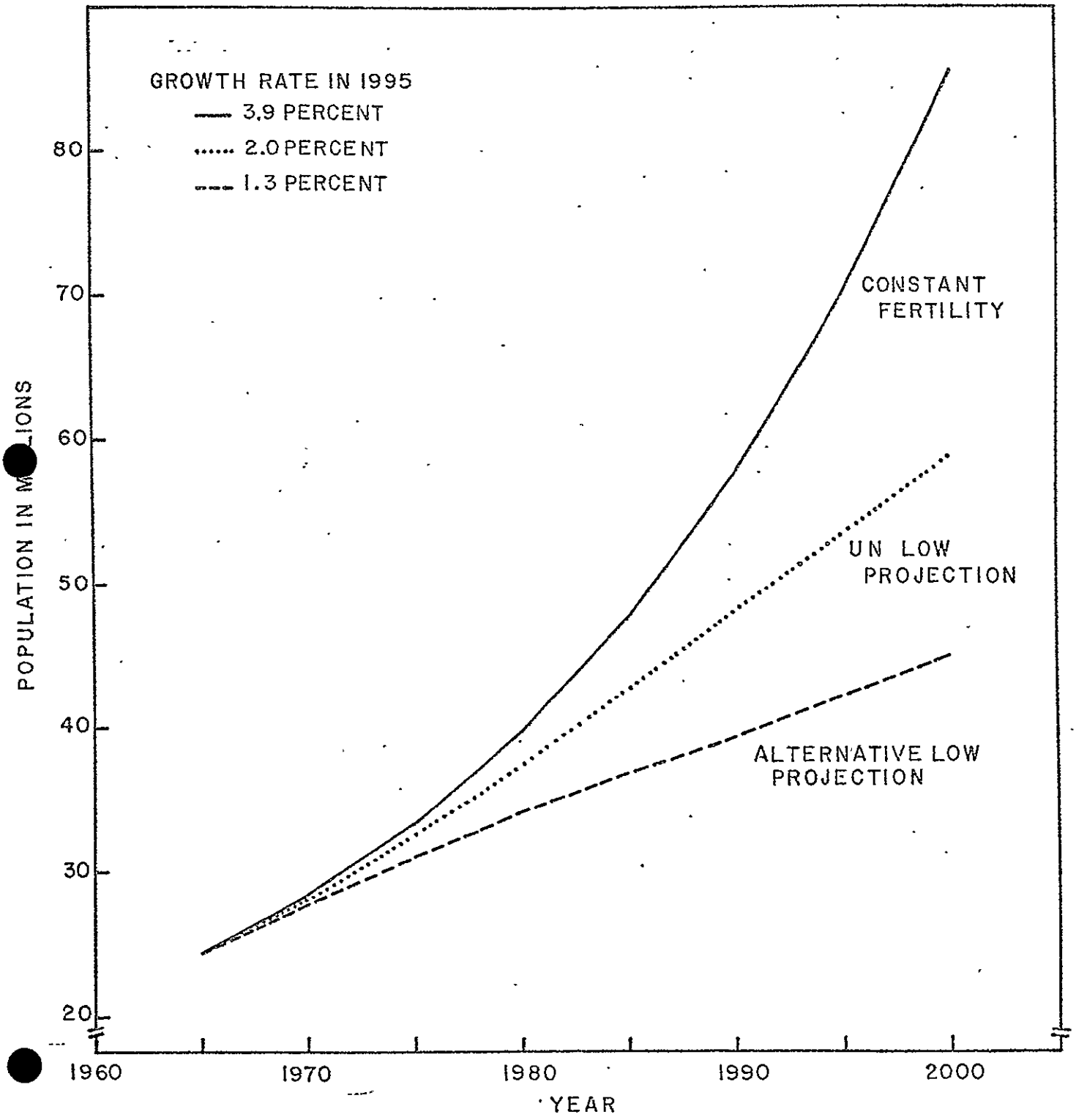
**Expectation of life at birth approximately 70 years

Source: United Nations Interagency Mission, Population and Family Planning in Iran (New York: United Nations, 1971), Table 1, p. 34.

Figure 2: Population Projections for Iran
1965-2000

Source: Drawn from data in United Nations Interagency Mission, Population and Family Planning in Iran (New York: United Nations, 1971), Tables 1 and 2, pp. 34, 36.

POPULATION PROJECTIONS FOR IRAN, 1965-2000



and the population would reach only 58.7 million in the year 2000. Low as this estimate may be, it is higher than what the government of Iran would desire.

A still lower projection prepared by Thomas Freyka of the Population Council is given in Table 12 and estimates the Iranian population in 2000 at only 44.9 million. Desirable as such a figure may be, it is not likely since a reduction of the birth rate from 39 per thousand in 1970 to 20 per thousand in 2000 and a decline in the growth rate from 2.5 to 1.2 percent would be necessary.[9] Commenting on this lower projection, the United Nations says:

> Iran's problem is that it is attempting to start its fertility transition a century after northwestern Europe and from much higher initial levels of fertility. The problem of Iran and all countries beginning fertility declines is that they will have a disproportionate number of potential mothers 20-25 years from now--the number will be large because women of 20-40 years of age will not have had their numbers reduced by the fertility decline subsequent to their birth, and will be proportionately larger than in a constant fertility population because the fertility decline will have reduced the potential size of the whole population (i.e. at first the younger non-reproductive population). A twenty-year target is the most difficult of all to choose for a marked decline in population growth rates. Thus, the United Nations "Low" projection . . . yields the highest number of births ever in the period 1985-1990, and even the very rapid decline in fertility . . . (i.e. Iranian women marrying 20 years hence are not likely to average more than two children) would yield hardly any decline in the population growth rate in the period 1985 to 1995 (1.4 to 1.3 per cent in a decade).[10]

EPIDEMIOLOGIC SITUATION

Mortality

The General Registration Bureau of the Ministry of Interior is responsible for registration of births and deaths all over the country. According to the law, the attending physician must give a certificate of death, including the date and cause of death, to the closest relative,

Table 12

Population Projections, 1970-2000, Based on Attainment of a Net Reproduction Rate of One in 1980-85

		1970	1975	1980	1985	1990	1995	2000
Gross reproduction rate*		2.9	2.3	1.7	1.3	1.2	1.1	1.1
Total fertility ratio		6.0	4.6	3.6	2.7	2.4	2.3	2.3
Crude birth rate**		39	32	27	23	21	21	20
Crude death rate		14	11	10	9	8	8	8
Population growth rate (percent)		2.5	2.1	1.7	1.4	1.3	1.3	1.2
Stable population growth (percent)***		3.3	2.5	1.5	0.6	0.2	0.0	0.0
Population (millions)		27.9	31.1	34.2	36.9	39.4	42.2	44.9
Births (thousands)		1,092	984	920	849	839	905	898
Difference in births**** (thousands)	C	214	581	986	1,393	1,873	2,315	---
	L	149	353	539	649	652	537	---

*The gross reproduction rate is assumed to fall from an average level of 3.3 in the period 1965-70.

**These rates are calculated from the female population only.

***Expectation of life at birth approximately 70 years

****From Table 11.

Source: United Nations Interagency Mission, Population and Family Planning in Iran (New York: United Nations, 1971), Table 2, p. 36.

who is legally charged with the responsibility of reporting the death. In general, there is no physician in most rural areas of the country. Therefore, many deaths are not reported, and the overall crude mortality rate of the country on the basis of the official figures is between six and seven deaths per thousand population per year. There is no doubt that the true figures are much higher than this. In the cities the rate rises to about 11 deaths per thousand, and health conditions are usually much worse in rural areas. Consequently, the rural death rates may be considerably higher than those recorded for cities.

In 1956, the General Department of Health Statistics and Evaluation decided to collect information about causes of death in the city of Teheran and later in other large cities. All the graveyards of Muslims, Armenians, Jews and Zoroastrians must receive a certificate stating the cause of death before burial is permitted. By this system of cooperation between graveyards and municipalities, both numbers and causes of death are being recorded. The figures for the city of Teheran are more reliable than those for other cities; even so, the registration of all deaths is not certain, and the causes of death recorded are not always reliable. Death rates in the city of Teheran calculated according to these data vary from eight to a little more than nine deaths per thousand population. The figures seem to be very low, even given the very young population of Iran.

Age specific mortality and changes over time: Age specific mortality cannot be calculated accurately at the present time because of underregistration of deaths and inaccuracy in the data on age distribution of the population. Even in the census figures, obvious digit preferences and very unusual male female ratios occur. For example, the male female ratio is about 105 before the age of five, 80 to 90 in the 15 to 24 age

group and more than 120 in the 35 to 45 group. These figures are not reliable for use in the calculation of age and sex specific death rates. A review of 1956-64 data shows that in each year, the number of deaths has been greater for men in almost every group of diseases. Age specific mortality in 1966 is shown in Table 13. No information is available about age specific mortality in rural areas. In other large cities the rates are comparable to those of Teheran.

Proportionate mortality and changes over time: The proportionate mortality ratio in 1966 was 36.8 percent for those under one year, 12.3 percent for the one to four age group and 33.6 percent for those older than 50 years of age. These figures had been 39 percent, 12.8 percent and 26.8 percent, respectively, in 1956. In the decade 1956 to 1966, the proportionate mortality of the under one and one to four age groups decreased, while increasing for the 50 and older group.

Leading causes of death: In order of magnitude, leading causes of death are diseases of the digestive system, diseases of the respiratory system, diseases of the circulatory system, diseases of early infancy, infectious and parasitic diseases, accidents, poisoning and violence, and cancer. Important changes over time are impossible to show because data are available for only a little more than ten years. The causes of death mentioned in certificates are not reliable; therefore, calculation of cause-of-death ratios is not advisable, but statistics suggest that infectious and parasitic diseases account for the majority of deaths.

Changes in morbidity: Statistics of morbidity are based on the report of notifiable diseases, and, because of the inadequate reporting system, no conclusions can be drawn from these data. For almost all notifiable diseases, an increase in the numbers reported has occurred, undoubtedly because of better reporting rather than because of worsening health conditions.

Table 13

Age Specific Mortality, Teheran, 1966
(Deaths per 100,000 Population)

Age Group	Number of Deaths	Age Specific Mortality
Under 1	4,921	71.0*
1- 4	1,495	693.3
5- 9	295	120.1
10-14	142	74.9
15-19	145	84.0
20-24	205	124.9
25-34	400	72.9
35-44	548	311.3
45-54	1,299	1,151.4
55-64	1,343	2,060.2
65+	2,426	5,293.0

*Per thousand live births

Source: General Department of Health Statistics, Ministry of Health

Health services

Structure and coverage of the health system: At present, besides the Ministry of Health, more than thirty other governmental, private and charitable institutions are involved in the delivery of health and medical services, some of which have a widespread network all over the country. In some instances, these institutions carry out their work without any information about the activities of other similar institutions, leading to repetition, while in many other localities no facilities at all are available.

The health institutions of Iran can be divided into three groups according to their relation to the government and their sources of funds: governmental institutions, semigovernmental institutions and private institutions. Each group has activities in curative as well as preventive services.

Important governmental institutions other than the Ministry of Health are health offices of other ministries (such as Ministry of Roads, Ministry of Finance, Ministry of Economics), National Iranian Oil Company, Plan Organization, National Bank of Iran, Insurance Organization of the employees of the government, medical schools and Social Insurance Organization of Laborers. The more important semigovernmental institutions are Imperial Organization for Social Services, Red Lion and Sun Association (something like the Red Cross) and Mothers' Protection Association.

The Ministry of Health has five under-secretaries--under-secretary for parliamentary affairs who looks after the Health Corps, among other responsibilities; under-secretary for operations who is responsible for all curative and preventive services; under-secretary for organization; under-secretary for planning who is also in charge of international relations; and

under-secretary for family planning. Only in recent years has this last post been created, since the government authorities now believe that the most important social and political problem of the country is overpopulation. The Ministry of Health has become a center for the coordination of all governmental activities to prevent overpopulation.

It must be mentioned here that the only organizations in the country which can reach all the rural areas are the Malaria Eradication Organization and the Health Corps. Even at the time of censuses, most enumeration activities are conducted by staff of the Malaria Eradication Organization.

Specific indicators: Statistics presented by the Iran Medical Association in March 1972 show that in January of that year 8,724 physicians had registered with the association. At the end of March 1972, 246 were added so that the number of registered physicians in the association rose to 8,970. It is estimated that at least 1,000 physicians have not registered in the association, and if the current number of medical school graduates (600) is added, the number of physicians in the country will be 10,570 by September 1972. This figure does not take into account those medical graduates returning from western countries. A population of 30 million in 1972 means that Iran has one physician for less than 3,000 population.

The rate of increase of physicians averaged six percent from 1946 to 1971, the city of Teheran having a considerably larger share than the rest of the country. The present number of graduates from medical schools is about 600 per year, as shown in Table 14.

Geographical distribution of physicians, as given in Table 15, shows that almost 50 percent of the physicians of the country are in Teheran, or one physician for every 834 persons. The majority of doctors in the provinces are also located in major cities, especially those with medical

Table 14

Graduates of Medical Schools, 1967 and 1970

Schools	1967	1970
Teheran	300	250
Tabriz	10	97
Shiraz	40	32
Mashad	50	73
Isfahan	50	68
Ahwaz	50	45
Melli (Private, Teheran)	40	27
Total	540	592

Table 15

Distribution of Physicians by Political Divisions
January 1972

Ostan or Farmandary-Kol	Number of Physicians		
	Total	General Practitioners	Specialists
Total for country	8,724	5,861	2,970
Central Ostan			
Teheran	4,192	2,206	1,986
Other Shahrestans	241	201	40
Guilan	234	206	34
Mazandaran	360	289	71
East Azarbaijan	429	309	120
West Azarbaijan	177	151	26
Kermanshahan	149	123	26
Khuzistan	542	403	139
Fars	427	285	142
Kerman	145	123	22
Khorassan	526	395	131
Isfahan	540	388	152
Sistan and Baluchistan	102	98	4
Kurdistan	85	73	12
Ports of the South	55	53	2
Hamadan	109	85	24
Chahar-Mahal	54	52	2
Lorestan	101	89	12
Ilam	17	17	-
Bovir-Ahmadi	16	16	-
Semnan	54	47	7
Yazd	55	45	10
Zanjan	35	33	2
Bushihr	51	45	6

Source: Bulletin of the Iranian Medical Association, No. 4 (March 1972).

schools. Iran suffers the common problem of other developing countries in that doctors much prefer to practice in an urban environment, thereby causing great disparity in the physician/population ratio in rural and urban areas.

The 35,000 hospital beds in Iran absorb the services of a very small number of the doctors (about one-sixth). The rest are working in outpatient clinics, either private or governmental.

FAMILY PLANNING PROGRAMS

Deliberate population policies

In view of the problems arising from a high rate of growth with disproportionate geographic distribution of population and limited resources and the effects of these conditions on the economic and social welfare of Iran, a specific and aggressive population policy has been considered essential. Fortunately, the highest official in the land favors such a policy in order to control population growth. In fact, His Imperial Majesty the Shehenshah was one of the first heads of state to sign the United Nations statement on population. The government has been active in drawing up a sound population policy and launching a family planning program, the need for which was clearly expressed in the Fourth and Fifth Development Plans.

Program base for policy formulation

Abortion problem: In Iran, abortion is granted only on strict medical grounds to save the life of the woman. It is the opinion of members of the medical profession that clandestine abortions are frequent, particularly in the large cities, although reliable data on the abortion situation in Iran are scarce or nonexistent. Hospital statistics give the number of abortions

in relation to deliveries but do not reflect the true situation because most deliveries and an unknown number of abortions take place outside any institution.

Farah Maternity Hospital in Teheran admits a number of post-abortion cases annually, corresponding to about 15 percent of its total admissions (49,000 deliveries and 6,000 abortions in 1969-70). This ratio has remained fairly constant during the last decade, and as a result no increased pressure is felt by the staff because of the abortion cases. One hospital belonging to the Health Insurance Scheme, with 80 percent of all members' pregnancies registered, reports an abortion frequency of 20 to 25 percent of the total number of pregnancies (about a thousand abortion cases per year), which is twice as high as the expected rate of spontaneous abortion.

A survey encompassing interviews of 752 IUD acceptors in Abadan revealed that 23 percent of the women stated they had had one or more induced abortions. Very little resistance to a relaxation of the current abortion law exists among the medical profession, particularly among gynecologists. In fact, some physicians have initiated measures towards more general acceptance of a liberal view on induced abortion.

The Technical Committee of the Family Planning Division has recently appointed a subcommittee to study the abortion problem and to propose amendments in the interpretation of the law (criminal law) which currently prescribes imprisonment of three to ten years for the woman herself and for the abortionist. Actually, prosecution for illegally induced abortion is extremely uncommon in Iran. At present it is difficult to propose changes in the legal aspects of induced abortion in Iran, but fortunately Iranian authorities are already giving close attention to future policy in this area. The magnitude of the problem in terms of social and health

implications is insufficiently known and should be further studied. International expertise in designing such studies, as well as financial support to carry them out, might be obtained.

Experiences of other countries in the transitional phase of adopting a smaller family norm show increasing frequency of induced abortion.[11] Intensified government-supported propaganda on the advantages of family planning might persuade women already pregnant to consider abortion. A certain failure rate is connected with all contraceptive methods, and a particular problem is pregnancy with an IUD in situ. It is possible that health personnel (doctors and midwives) would be more ready to promote the use of IUDs if abortion were legally granted in case of failure. Moreover, the public's confidence in the method would probably increase. The preference of approach might be between highly effective methods of fertility control with certain small risks to health and less effective but harmless methods with legal abortion as a backup measure.

The implications of legal abortion for inadequate health resources, hospital facilities and manpower must be examined if a liberalization of the abortion law is considered. For example, abortions performed in outpatient clinics are not recommended. Physicians should be adequately trained in suction curettage techniques, and a pilot scheme to train carefully selected midwives might also be considered. To guarantee high quality of performance, doctors and midwives should be requested to obtain special licenses granting them the legal right to perform abortions.

International assistance might be needed for training and for equipment. Because the suction method is preferable to the conventional dilation and curettage method in cases of incomplete spontaneous abortion, training and provision of equipment for the technique could be initiated irrespective of a change in the legal position on induced abortion.

Programs for family planning

National: Towards the end of 1966, royal orders were issued to the government to proceed with plans for establishing a family planning program, which was formally launched in April 1967 as a division of the Ministry of Public Health with an Under-Secretary of State for Health and Family Planning as its head.

The goal of the Iran Family Planning Program is to promote "the physical, mental, social and economic welfare of families and in consequence that of society."[12] The stated objectives of the program are as follows:

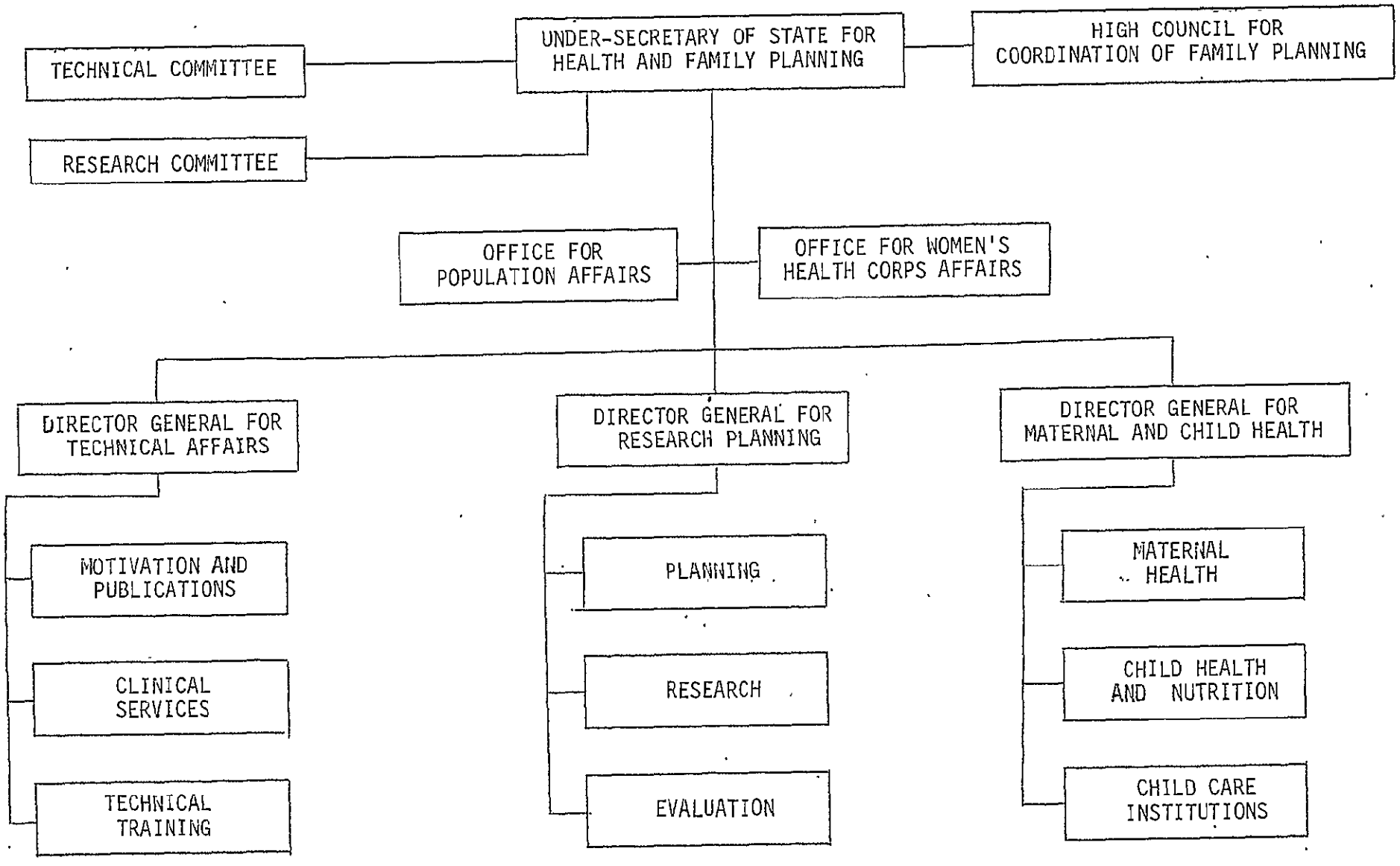
1. To strike a balance between the family size and the social and economic situation
2. To secure social welfare through welfare at the family level
3. To reduce deliberate abortion and the resulting hygienic and clinical complications
4. To correlate the rate of population increase and the per capita income
5. To balance the age structure of the population
6. To increase active manpower in the country
7. To reduce the population growth rate to one percent per year by 1990.[13]

The Ministry of Public Health was called upon to plan, organize and implement the program. The organizational chart of a special division in the ministry, established for this purpose, is shown in Figure 3. The division consists of five major activity units, two basic committees and a high council for coordination. The five activity units are training and communications; clinics and supplies; planning, demography, evaluation and research; maternal and child health services; and administration.

Figure 3: Iran Family Planning Division Organization Chart

Source: United Nations Interagency Mission, Population and Family Planning in Iran (New York: United Nations, 1971), p. 130.

ORGANIZATION CHART
IRAN FAMILY PLANNING DIVISION



The two basic committees of the division are the technical committee, chaired by the Under-Secretary for Health and Family Planning and including about 20 leading gynecologists who advise on all technical matters, and the research committee, with representation from the Family Planning Division, the Plan Organization and the National Council of Universities. The latter committee plans, organizes, funds and participates in all research efforts in family planning, as well as training researchers.

A total of 1,529 family planning centers are currently offering services to the public in different parts of the country. The Ministry of Health operates 678 clinics, and the remaining 851 are run by nongovernmental and private organizations; most operate on a part-time basis. The distribution of these clinics is given in Table 16. In addition, 35 mobile teams and 383 Health Corps operate as extensions of the stationary clinics for health and family planning.

In terms of contraceptive methods used, the Iranian family planning program has so far depended heavily on contraceptive pills. Up to 80 percent of the clients use the pill, 4.5 percent use the IUD, and the remaining 15.5 percent use condoms and other methods, as shown in Table 17.

The Iranian Family Planning Program has ambitious training plans. So far there is one training center in Teheran for short-term training of medical and paramedical personnel. Family planning has also been incorporated into the curricula of the seven universities. The School of Public Health at Teheran University offers a major in family planning in its program leading to a master's degree in public health (M.P.H.).

Voluntary efforts: Limited voluntary efforts in family planning preceded the official program. A Family Planning Association of Iran was established in 1958. Because of an expected negative reception, the association operated very conservatively, avoiding publicity. The

Table 16

Distribution of Family Planning Clinics

Area of Service	Number of Clinics
Teheran Health Department	40
Ostans	
Markazi	62
Guilan	44
Mazandaran	47
East Azerbaijan	39
West Azerbaijan	39
Kermanshah	26
Khuzistan	34
Fars	51
Kerman	38
Khorassan	60
Isfahan	51
Sistan and Baluchistan	27
Kurdistan	16
Chahar-Mahal and Bakhtiari	18
Lorestan	12
Hamadan	19
Yazd	16
Semnan	13
Persian Gulf Ports and Islands	20
Sea of Oman Ports and Islands	3
Ilam	3
Health Corps	397
Imperial Organization	249
In Education Institutes	18
Universities	4
Social Insurance Organization	43
Imperial Armed Forces	82
NIOC	9
Woman's Organization	16
Red Lion and Sun Society Charitable Organizations	6
Other Organizations	4
Grand total	1,529

Table 17

Contraceptive Totals by Method Used, 1967-71

Year	Total Patients	New Patients	Pill Cycles Prescribed	IUDs*	Condoms Distributed
1967	313,348	130,355	264,989	7,599	--
1968	568,443	142,781	439,550	13,855	27,583
1969	1,521,829	293,737	1,350,990	13,482	231,089
1970	2,246,751	354,468	2,065,485	18,591	808,643
April-June, 1971	757,450	122,246	698,045	3,935	315,976

*An estimated 16,000 IUDs were inserted prior to 1967.

Source: Iran Family Planning Program Summary of Activities, 1967-1971 (Teheran: Ministry of Health, 1971).

association received support from such international agencies as the Pathfinder Fund and the International Planned Parenthood Federation. During this early period, attitudes towards family planning improved among political, professional and enlightened religious leaders. But the activities were still very limited, with no significant demographic impact.

Increasing awareness of the growing population problem and increasing cultural and political support brought about official steps to establish the national family planning program.

Problems ahead

Iran is definitely going in the right direction towards curtailing the rate of population growth. Nevertheless, many problems are faced by this celebrated effort in family planning, some of which are inherent in the demographic and cultural characteristics of the population itself and some of which relate to the administrative structure and the availability of personnel and resources. These problems are considerable obstacles to the very ambitious goal of reducing the population growth rate to one percent per year by 1990.[14] In order to achieve the goal more than 500,000 eligible women must be reached by the family planning program each year.[15]

The following are examples of the difficulties that Iran faces:

1. The economic and technologic advances in the country exaggerate the population problem by allowing a marked reduction in mortality, especially childhood mortality. More aggressive approaches to contraception must be introduced to counteract the resulting imbalance, if fertility is maintained while mortality declines.

2. The age structure of the population indicates the high proportion of young groups, including a tremendous number of female babies who are potential mothers themselves. Even if the target population is reached now by the family planning program, a high growth rate will continue for some time.

3. The geographic distribution of the population and the heavy rural-urban migration are disadvantageous. As already indicated, migrants may begin to enjoy the declining mortality of the city while maintaining their high fertility pattern. Attention should be given to formulating migration policies which could mitigate the effects of such a cycle.

4. Although some enlightened religious and political leaders have sanctioned family planning, the general populace is still bound by tradition which favors high fertility. A high rate of illiteracy, especially among women, and a continued rural culture even within the large cities compounds this problem. Intensified efforts in communication, motivation and education will be required to overcome the barriers of tradition.

5. The health services which provide an avenue for family planning services are not yet adequate in quantity or in quality. Many rural and town areas are not reached by these services, although the rural and nomadic populations exhibit the highest fertility in Iran. More people must be reached and dropout rates must be reduced.

6. Iran's efforts in the family planning sphere suffer from the inadequacy of health manpower. Only about five percent of physicians are female in a country where male physicians are not highly acceptable for care in such private matters as family planning.[16] The shortage, maldistribution and unfavorable sex composition of physicians are great handicaps to establishment of adequate family planning services, especially if abortion and sterilization are advocated.

7. Many students of population feel that had abortion not been accepted in Japan, the accelerated transition could not have been achieved there. Now Iran desires an accelerated natality transition and may have to consider seriously not only legalization of abortion but also motivational schemes and provision of abortion and sterilization services.

8. Adequate coordination of family planning services offered by many organizations, with different patterns and various approaches, must be made possible.

9. Most research activities so far have been in the category of basic research; Iran's program needs more intensive and extensive research in specific problems of program development, implementation and evaluation.

10. Training efforts have so far been limited. While it is vital to secure the interest and active involvement of the medical profession and to increase medical manpower, it is equally crucial to increase paramedical manpower and to give more responsible roles to nurses, social workers and particularly rural midwives.

SUMMARY AND CONCLUSIONS

The population of Iran is growing at one of the fastest rates in the world. Yet the Iranian government is determined to curtail this growth within a short period of time in order to secure the national goals of economic and social development. In order to accomplish these goals, Iran must resort to more aggressive efforts in family planning, including even legalized abortion and sterilization. The problems explored above and their solutions most certainly deserve careful study and evaluation.

REFERENCES

1. Population Bulletin of the United Nations, No. 7 (New York: United Nations, 1963).

2. Mohammad B. Mashayekhi, Pauline A. Mead and Guy S. Hayes, "Some Demographic Aspects of a Rural Area in Iran," The Milbank Memorial Fund Quarterly, Vol. 31 (April 1953).

3. Preliminary Report of Fertility Survey in the Sample Villages of Kazeroon District (Iran: University of Teheran Institute for Social Studies and Research, 1966).

4. Charles Windle and Georges Sabagh, "Social Status and Family Size of Iranian Industrial Employees," The Milbank Memorial Fund Quarterly, Vol. 41 (October 1963).

5. United Nations Interagency Mission, Population and Family Planning in Iran (New York: United Nations, 1971).

6. Determinants and Consequences of Population Trends (NY: UN, 1953), p. 98.

7. Ali A. Paydarfar, Demographic Consequences of Modernization: A Population Analysis of Iran and Comparison with Selected Nations (Washington: International Research Institute, American Institutes for Research, 1967).

8. "World Population Prospects 1965-85, as Assessed in 1963" (Mimeographed; New York: United Nations Population Division, 1969) and "World Population Prospects 1965-2000, as Assessed in 1968," (Mimeographed; New York: United Nations Population Division, 1970).

9. Thomas Freyka, "Population Projections of Iran," (unpublished material), cited in United Nations Interagency Mission, Population and Family Planning in Iran (New York: United Nations, 1971).

10. United Nations Interagency Mission, p. 37.

11. A.R. Omran, "Abortion in the Demographic Transition," in Rapid Population Growth: Consequences and Policy Implications (Baltimore: The Johns Hopkins Press, 1971).

12. Fourth National Development Plan 1968-1972 (Teheran: Imperial Government of Iran, 1968).

13. Iran Family Planning Division, Summary of Activities, 1967-71 (Teheran: 1971).

14. Ataollah Amini, Plan Organization (Teheran: 1971).

15. United Nations Interagency Mission.

16. C. M. H. Mofidi, "Development, Migration and Medical Manpower: The Situation in Iran," Second Conference on Medical Education (Teheran, 1970).

ISRAEL: A POPULATION DILEMMA*

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A COUNTRY OVERVIEW

Physical characteristics

Prior to June 1967, Israel's land mass was about 7,800 square miles, or 20,200 kilometers, of which the wild, forbidding Negev desert occupied the area between the Jordanian border and the sea--over 50 percent of the land. The country is an irregular, narrow strip of land some 265 miles long, only 12 miles wide at its widest point north of Tel Aviv. The nation is bordered by the Mediterranean Sea on the west, Lebanon on the north, Syria on the northeast, Jordan on the east, the Red Sea on the south and the Sinai Peninsula on the southwest.

East of the coastal plains, ridges of hills and mountains extend the length of the land. Further east lie the Jordan Valley, the Dead Sea area and the Ha'arava Rift, and south of the Dead Sea is the desert region of the Negev.

Because of the dissimilarity of the regions, the climate changes from

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*The bulk of the data base for this chapter is up to 1965-66, which reflects the situation prior to June 1967. The data base was not revised during later drafts of the chapter since the basic tenets of the arguments presented here were not drastically altered by "newer" data.

one area to another. The coastal plains experience the warm, humid summers and rather mild winters with westerly winds typical of the Mediterranean. The rainy season occurs, as is the case with all of Israel, during the winter months of December through February, while rain during the summer months of June through August is infrequent. In the hill country to the east, the climate is cooler and less humid with more rainfall in the winter months. The third major region, the Jordan Valley area, is not relieved by the westerly winds and hence is warm and dry in the summer, with little rainfall at any time of the year. In the semi-arid Negev area to the south, sharp fluctuations in diurnal and annual temperatures occur, but generally summers are warm and winters are cold.

Political history

Historical sketch: The political history of Israel can best be summarized by tracing the various migratory waves of the nineteenth and twentieth centuries, which were identified as Aliyots, meaning "ascent" or migration of Jews to Israel.

The resumption of a significant Jewish presence in what was then Palestine may be traced back to the late nineteenth century. At that time there were 50,000 Jews in Palestine and 11,000,000 Jews in the world. During the First Aliyah, 25,000 Jews migrated from eastern Europe to Palestine. The forces of this migration may be divided into the "push" of anti-Semitism in eastern Europe and the "pull" of the desire to "return to Zion."[1]

It was the Second Aliyah (1904-13) of 40,000 immigrants that was deeply affected by political Zionism. This Aliyah commenced after the First Zionist Conference in Basle, Switzerland, in 1897 and was influenced by the ever-widening dissemination of the Zionist movement. During this period, Hebrew became the language of the Palestinian Jew and the kibbutz* emerged as a method of agricultural development.

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*The word kibbutz is the Hebrew translation of "ingathering"; a kibbutz is a collective settlement.

Due to displacement and emigration, a net loss of population from 80,000 to 55,000 occurred in Palestine in the years prior to and during the First World War. The Third Aliyah began after World War I and lasted until 1922, bringing 35,000 Jews to Palestine. Other achievements during this time included the founding of the Histadrut (National Federation of Labor) and the establishment of schools from the kindergarten to the university levels. During World War I, the British government issued the Balfour Declaration in favor of "the establishment in Palestine of a national home for the Jewish people." World War I also terminated Turkish rule in Palestine and marked the advent of the British Mandate.

The Fourth Aliyah of 60,000 immigrants was composed mainly of middle-class Polish Jews. The thrusts for this influx were an oppressive change in Polish policy toward Jews and a restrictive immigration policy on the part of the United States.

The Fifth Aliyah (1932-39) marked the ingathering of 225,000 immigrants, by far the largest group yet. By 1939 the Jewish population of Palestine approached half a million and comprised 30 percent of the country's total population.

In 1939 British policy toward immigration was manifested by the White Paper, which restricted Jewish immigration into Palestine to 75,000 Jews during the next five years, to be followed by further immigration only upon Arab approval. The White Paper also restricted Jewish land purchase to land in the area of heaviest Jewish settlement only, not to exceed five percent of the total land area. The British withdrew their last Palestinian garrison in May of 1948, and the Provisional Government of the Jewish State issued a Declaration of Independence and proclaimed the State of Israel on May 14, 1948, whereupon war between the Arabs and Israelis began. The war lasted until

March 1949, when it was terminated by the United Nations.*

Political structure: Israel's executive structure is very similar to the western parliamentary model. The first national election was held in January 1949. For the period from May 14, 1948, when statehood was declared, to January 1949, a provisional government was established with the authorization to act for the state until elected bodies could be chosen.

Israel is a republic headed by a president elected by simple majority of the single chamber parliament, the Knesseth. The parliament's 120 members are elected on a national basis by adult citizens under a system of proportional representation. The term of office for each parliament member is four years. The president, however, is elected for a term of five years. He functions as a formal head of state with no executive power to veto legislation.

The Cabinet, better known as the Government, is formed by a member of the Knesseth who is charged by the President to do so. Therefore the Government is entirely responsible to the Knesseth, and its duration depends on whether or not it retains the parliament's confidence.

Israel has no written constitution. The functions of the president, the powers of the Government and the legislative authority were spelled out in the Transition Law which was passed on February 16, 1949. The Government, as well as the prime minister, have not been given any special constitutional powers.

The judicial system has been retained from the pre-independence regime, with a Supreme Court composed of nine judges appointed for life. Along with the civil courts, the rabbinical courts have judicial powers in matters of the

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*Editorial Note: The war resulted in one of the most difficult population problems in the Middle East, the problem of the Palestinian refugees.

personal status of Jews, that is, divorce and marriage problems. Judges in the rabbinical courts are maintained and paid directly by the Government.

Because of the nature of the electoral system, a great number of political parties appeared in 1949. However, their number had declined somewhat by the 1951 elections and more so by the 1955 elections. At present, about ten parties dominate the political arena in Israel. Their positions encompass a great variety of political philosophies, ranging from socialism to free enterprise to strict control by religious authorities. The largest party is the Mapai or Israel Labor Party, from which the Prime minister and several of the other most important ministers are usually chosen. It dominates the Histadrut and is the major factor in determining economic policy. The orientation of the Mapai is characteristically socialist, but not Marxist.[2]

Population density and distribution

Before 1967, the density of Israel's total population of 2.7 million was about 346 persons per square mile or 134 persons per square kilometer. However, of the total land area, about one-third is planted in crops or used for grazing. Over 50 percent of the population live in the densely populated coastal plains; the Negev region, although over one half of the total area, accommodates less than five percent of the total population. Thus the per capita share of productive farmland is less than one half of an acre.

The total population in 1966 was distributed among about 700 Jewish villages, 100 Arab villages and 26 cities and towns. The major cities of Tel Aviv, Haifa (the main seaport) and Jerusalem (the nation's capital) have grown significantly. In 1914 the population of Tel Aviv was 2,000; in 1939, 150,000. In 1919, Jerusalem had a Jewish population of 10,000; by 1943 the

Jewish population was 90,000. During the same period, the Jewish population of Haifa increased from 10,000 to 60,000.

SOCIAL AND ECONOMIC SITUATION

Economic history

The economy of Israel has always been more industrial and trade-oriented than agricultural. Early in 1950, trade and other services accounted for the largest proportion of the net domestic product, followed by manufacturing and mining and quarrying; the agricultural sector was the fourth main contributor, accounting for 11.4 percent. Since 1952, the agricultural share has declined until in 1969 it contributed only 7.3 percent, while the manufacturing sector has inched upward to 25.3 percent of the total. Trade's contribution has decreased, while general government and private nonprofit institutions have maintained a level of about 18 percent.

The agricultural sector: Although the agricultural sector's contribution to the total wealth of the nation has been declining, agriculture has been very important economically in providing the necessary food products for a growing population and socially by providing for a new type of Jewish national life. "In fact, the mass influx of immigrants, the shortage of food, and the sudden availability of cultivable land continued to stimulate settlement activity: within five years the number of settlements doubled."[3] This dual role, though essential to national development, met with constraints such as water shortages and a lagging demand for agricultural products. Available conventional sources of water, excluding desalinated sea water, were not sufficient to meet the requirements of irrigating one half of the five million potentially available dunams (about 2,000 square miles).[4] Furthermore, the

cost of irrigation became excessively high, since the water had to be moved from the north where the sources are to the center or south where the land is. From 1948 to 1966, the cultivated area more than doubled and the area under irrigation more than quadrupled. In 1966, 1.1 million acres were cultivated and 380,000 acres (34.5 percent of the cultivated land) were irrigated. Of the irrigated areas, 12 percent grew field crops; 14 percent citrus and other fruits and seven percent vegetables, potatoes and groundnuts. An adequate supply of cereals, grain fodder and fats was not grown because necessary amounts of land and water were unavailable.

In 1965, Israel produced 75 percent of the country's food requirements in addition to producing food for export. Israel has had to learn to plan cultivation and marketing to offset surpluses of many types of produce. However, comprehensive planning has been possible because 90 percent of the land of Israel is owned either by the state or by the Jewish National Fund. A Joint Planning Authority under the Ministry of Agriculture sets Israel's agricultural policy, which generally is to replace imports and increase exports.

Agricultural settlements and their social structures: As great numbers of immigrants continued to enter the country, the urgent problem of settling and integrating the new arrivals arose persistently. The state also had to cope with the problem of border security. In an attempt to solve both dilemmas, the government encouraged the development of agricultural settlements on especially strategic land locations. As a result, four distinct types of agricultural settlements emerged, with differing social and economic structures ranging from rigid collectivism to looser forms of cooperation to individual cultivation.

Moshava are ordinary rural villages with private land ownership and private enterprises.

Moshavs are workers' cooperative small holders' settlements, based on the principle of mutual aid and equal opportunity among members. Farms in such settlements are equal in size--the size depending upon the degree of irrigation--and each farm is worked by a family. All the produce of the land is sold through a central cooperative, and all purchases are made cooperatively. The supreme authority of the moshav is a general assembly of all the members, and general administration is done through a village council elected by the assembly.

Kibbutzim or kvutza are collective settlements in which all property is collectively owned and worked. The members give their labor to the common welfare and receive in return their needs for subsistence in accordance with the financial means of the settlement. A central dining room and kitchen, communal kindergartens and children's quarters, communal cultural and social halls and central stores provide domestic and social services. Individual living quarters give the members their only privacy. The kibbutz is governed by a general assembly consisting of all its members and is predominantly agricultural, though some may operate considerable industrial enterprises.

Moshav shitufi are settlements based on collective ownership of property and collective work as in the kibbutz. Each family, however, as in the moshav, has its own house and is responsible for its own domestic services. Payment for work is based on needs, family size and the financial means of the settlement. This type of settlement tends to develop industrial enterprises along with its agricultural activities.

In addition to the above four classes of agricultural settlements, the combination of the agricultural settlement and national security measures is best exemplified by the nahal, a type of collective farming settlement located in particularly hazardous areas and settled by soldiers on active duty, some of whom remain in the settlement after separation from the service.

The industrial sector: The industrial sector since 1958 has shown increases in its contribution to Net Domestic Product in response to favorable economic

policies such as investment loans, prices and trade. The composition of industrial production during the early 1950s was heavily weighted toward consumer goods, that is, food, clothing and footwear, which drastically declined during 1951-52 and 1955, while diamond, motor vehicle and rubber tire production increased. After 1955, as Kleiman and the Bank of Israel studies demonstrated, the economy showed some diversification, but not of major proportions.[5] The housing industry that had played a significant role in the early years of nationhood has been declining in importance since the early peak of 1951, although the demand for housing, mainly a function of new immigrant waves and rising incomes, continues to maintain a large industry with concomitant rising costs for housing and skyrocketing land values.

Changes in gross national product (GNP)

Annual national income of Israel has continued to rise from its 1951 level of less than one billion Israeli pounds.* By 1968 it had reached 115 billion Israeli pounds, a per capita income of 4,100 Israeli pounds. Per capita national income has shown a consistent growth pattern despite the significant increase in the total population.

Detailed analyses of the structural changes in the total economy continue to be of major concern to many Israeli and other economists. The major focus is, however, toward an understanding of the various factors that have contributed to the growth in GNP. The resultant analyses have shed some light on the probable causes of growth, but in no way do they totally explain it. For example, after very careful analysis of changes in tangible capital (that is, capital available for generation of further production), and changes in the

*I £= Israeli pound; 3.50 I £= $1.00.

quantity and quality of the labor force, Kleiman contended that certain "other" forms of human capital (other than sheer numbers in the labor force, skills and education of the labor force) have been very important. He cited such factors as those connected with the integration of immigrants into the society--for example, knowledge of Hebrew and standards of health.[6]

One salient feature of the Israeli economy is the large import surplus that has been growing steadily since the early days of statehood. This surplus defines the balance of payments and in some instances has been used to reflect Israel's heavy dependence on unilateral transfer of capital, or foreign dependency (mainly upon the United States). Although 70 percent of the total import surplus incurred during the period 1949-65 was met by unilateral transfers, such transfers do not represent a future burden on the economy since they do not have to be repaid. The critical question is, then, for how long can unilateral transfers last? If such sources dry up, will the economy be able to tighten its belt or will it collapse? These questions are very difficult to answer with any degree of certainty and are thus posed only as a signal of potential dangers.

Employment and the labor force

Changes in the labor force are basically a function of changes in the demographic factors such as birth rates and net migration that influence total population growth. Israel's labor force, which tripled between 1949 and 1965, grew at roughly the same rate as the total population. In 1949, 29.3 percent of the population were members of the labor force. This percentage had increased to 34.3 by 1965. Since the growth rate of the total population is responsive to immigration, the age, sex and skill profiles of the immigrants become crucial. The labor force has, however, fluctuated slightly--around 34 percent of the total population, but since the total population almost doubled in 15 years,

the crucial question becomes one of to what extent the economy can continue to provide jobs if similar growth in the labor force continues. Changes in employment and unemployment rates shed a great deal of light on answers to this question.

In 1949, unemployment rates were very high, about ten percent, and peaked at 11.3 percent in 1953.* Although immigration rose significantly during the 1950-52 period, unemployment declined as a result of large scale housing and other public projects. Such declines were achieved at a cost of inflationary pressure, however, and the government virtually ceased deficit financing subsequently. Unemployment responded immediately by rising to 11.3 percent in 1953. The rate then declined steadily until in 1965 only 3.6 percent of the labor force were unemployed.

It must, however, be quickly pointed out that changes in the labor force composition as well as employment composition differed significantly by sex and origin of immigration.** Labor force participation, especially of females, was comparatively higher in the western-born group of immigrants than in the eastern-born group during 1955-64, as Table 1 shows. Of all western-born immigrants, 42.6 percent were members of the labor force. Among western-born males, 62.1 percent were in the labor force, while only 23.2 percent of all western-born female immigrants were employed.*** The percentage of the total

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*The 1949 figure excludes the proportion of the labor force that were in immigrant camps prior to moving out into the active labor force.

**For the purposes of this discussion, immigrants will be classified as to whether they are western-born (Europe, America, Oceania) or eastern-born (Asia or Africa). These two groups, along with the non-Jews, constitute the three subgroups of the total population.

***To establish some idea of the participation of western-born immigrant women, assume that western-born immigrants were equally divided between males and females.

Thus, 0.621 = 62.1 percent of all western-born males in labor force
x 0.5 = 50 percent of males in total western-born population
0.3105 = 31 percent of all males in western-born immigrant group in labor force
42.6 = percent of all western-born immigrants in labor force
-31.0 = percent of all western-born immigrants in labor force who are males
11.6 = percent of total western-born immigrants in labor force who are females
x 2
23.2 = percent of all females in western-born immigrant group in labor force.

Table 1

Jewish Immigrants to Israel, 1955-64

by Occupation, Continent of Residence* and Sex

Occupation	Europe, America and Oceania		Asia and Africa		All Continents**	
	Males	Total	Males	Total	Males	Total
	Percentages					
Professional and technical workers	17.6	21.4	4.8	6.2	11.5	14.4
Managerial, administrative and clerical workers	14.4	17.4	9.8	11.9	12.1	14.9
Merchants, agents and sales workers	6.8	5.5	13.4	11.2	10.0	8.1
Farmers, fishermen, plantation workers	1.6	1.3	4.2	3.3	2.9	2.2
Industrial workers and craftsmen	44.1	40.5	46.2	48.1	45.1	44.0
Building, transport and services workers	11.7	10.4	14.5	12.6	13.0	11.4
Unskilled laborers	3.8	3.5	7.1	6.7	5.4	5.0
Total Earners	62.1	42.6	40.4	25.6	49.4	32.6
Total Non-Earners	37.9	57.4	59.6	74.4	50.6	67.4

*1955-57 data refer to continent of birth
**Including unknown continents of residence

Source: Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).

labor force in professional, technical, managerial, administrative and clerical areas is higher than the corresponding percentages of the males in the labor force. Thus, western-born women were employed predominantly at relatively high level positions.

Of all eastern-born immigrants, 25.6 percent were earners, and 40.4 percent of all eastern-born males were participants in the labor force. If the same assumptions are made about the sex ratio, the results show that about 10.8 percent of eastern-born immigrant women were in the labor force, again more heavily represented in white collar occupations than males. However, women's participation in the labor force has been restricted by labor laws such as the 1954 Employment of Women Law, which restricted or prohibited certain types of employment for women and allowed no night work.

A further examination of the data in Table I reveals that western-born immigrants, on the whole, were more heavily concentrated in white collar occupations than were the easterners (38.8 percent of the labor force compared to 18.1 percent), while the latter group was obviously more heavily concentrated in blue collar and agricultural occupations. Furthermore, the westerners generally bring to Israel higher levels of skills and professions than do the easterners, which has direct bearing on differential earning power.

Education

In any discussion of education in Israel the impact of immigration again must be kept in mind. For example, according to analyses of the 1954 Labor Force Survey data, over a third of the total population at the beginning of statehood in 1948 had completed at least high school.[7] However, this figure does not give an accurate insight into the educational needs of the population, since such factors as changes in the age structure of the population caused by new immigrant groups and the differential fertility levels of the veterans certainly alter the demands upon the formal educational system.

Educational programs refer basically to the formal education system which by definition includes primary, secondary, higher and vocational education.[8] The primary subsystem is particularly of concern, since it must accommodate the growing numbers of children of primary school age.

During the 1965-66 school year, as Table 2 shows, a total of 669,392 students were enrolled in all Hebrew and Arab schools. Over half of the total number of students were in 1,434 primary schools. Although such aggregate numbers are impressive, one must hasten to point out the observable disparity between the eastern and western immigrants' representation at all educational levels beyond the compulsory education period, particularly for females. However, a tendency is noted for levels of educational attainment to increase with duration of residence in Israel for any given cohort.

Social welfare

It is appropriate to touch briefly upon the subject of social welfare not only to round out the total services provided by the state but also to provide necessary background information for subsequent discussions of population policy and family planning.

The total energies and efforts first expended in attempts to absorb meaningfully and humanely all immigrants into the state varied with fluctuations of migratory waves. Many of the services offered to immigrants have since been institutionalized into social welfare services provided by the state to the whole population. Such services include the National Insurance Law of 1954, which provides Israelis with old age pensions; survivors' insurance, disability grants; monthly family allowances for each child under 18 after the third; pre-vocational and educational workshops for children with behavior or family problems; homes for re-education of wayward, delinquent, deaf and orphaned

Table 2

Education in State Schools, 1965-66 *

Type of School	Hebrew			Arab		
	Schools	Teachers	Pupils	Schools	Teachers	Pupils
Kindergartens	2,491	2,825	85,541	151	238	7,845
Primary	1,253	20,598	395,901	181	1,620	49,349
Schools for handicapped children	131	1,207	11,316	1	1	7
Schools for working youth	107	266	4,374	5	23	213
Secondary	167	3,987	49,628	8	83	1,558
Secondary evening	21	314	2,456	-	-	-
Continuation classes	129	1,622	10,951	-	-	-
Vocational	187	3,105	31,239	4	24	217
Agricultural	28	613	6,564	1	8	93
Teacher preparation classes	20	423	4,291	-	-	-
Other post-primary schools	37	144	1,422	1	5	33
Teacher training colleges	56	1,255	6,251	1	20	143
Totals	4,627	36,359	609,934	353	2,022	59,458

*In addition, there were 22,335 students in academic institutions, 28,669 pupils in other Hebrew institutions and 12,638 in other Arab institutions.

Source: Based on data from Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).

children; and services for rehabilitation of the physically handicapped. In addition, many private organizations such as the Women Workers' Council, Pioneer Women's Organization, Women's International Zionist Organization and Hadassah direct their resources to social welfare.

DEMOGRAPHIC SITUATION

Population trends

At the end of 1948, the year of independence, Israel's total population was less than one million, with a Jewish population accounting for three fourths of that total. In less than a decade the total population doubled and then continued to increase at an average rate of over three percent. By 1966, the population had reached the 2.6 million mark. Table 3 shows the yearly growth during this period. The largest gains, which have not been approached since, occurred during the first three years after independence when the growth rate averaged twenty percent. The rapid growth rate between 1948 and 1951 seems to have provided replacement of the Arabs who were displaced. Between 1948 and 1965 the rate of annual growth of the total population was 6.3 percent.

As Figure 1 shows, when broken down to its components--rate of natural increase and migration--the rate of growth reveals a gentle upward slope in the rate of natural increase but significantly fluctuating migratory rates. After the peak of 1948, immigration declined, reaching its lowest level in 1953. Two other peaks occurred, one in 1957 and the other during 1962-64. Although immigration had declined since 1948, it still accounted for 42 percent of the total population growth and 47 percent of Jewish population growth. Given the significant role that migration played, not only in terms of period changes in total population size but also in shaping subsequent growth patterns (due to

Table 3

Population Size and Growth*
1948-65

Year	Total (population in thousands)	Jews	Non-Jews	Total Percent Increase Over Preceding Year
1948	914.7	758.7	(156.0)**	-
1949	1,173.9	1,013.9	160.0	28.3
1950	1,370.1	1,203.0	167.1	16.7
1951	1,577.8	1,404.4	173.4	15.2
1952	1,629.5	1,450.2	179.3	3.3
1953	1,669.4	1,483.6	185.8	2.4
1954	1,717.8	1,526.0	191.8	2.9
1955	1,789.1	1,590.5	198.6	4.2
1956	1,872.4	1,667.5	204.9	4.7
1957	1,976.0	1,762.8	213.2	5.5
1958	2,031.7	1,810.2	221.5	2.8
1959	2,088.7	1,858.8	229.9	2.8
1960	2,150.4	1,911.3	239.1	3.0
1960***	2,154.1	1,910.8	243.3	-
1961	2,234.2	1,981.7	252.5	3.7
1962	2,331.8	2.068.9	262.9	4.4
1963	2,430.1	2,155.6	274.5	4.2
1964	2,525.6	2,239.2	286.4	3.9
1965	2,598.4	2,299.1	299.3	2.9

*End-of-year figures

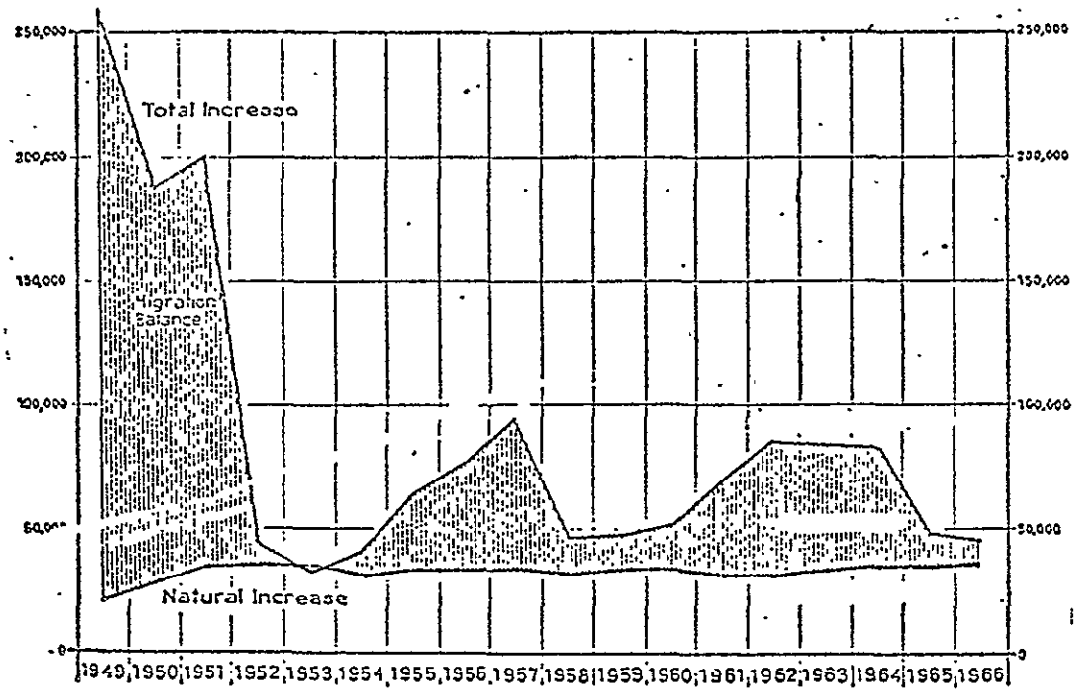
**Estimate for population within borders of Israel on November 8, 1948 as set by the 1949 Armistice Agreements. Jewish population at this date was 716,000.

***New series (permanent population) based on the census of May 22, 1961. The old series (present population) is based on the Registration of Population of November 8, 1948.

Sources: Abstract 1966, No. 17, p. 20, Table B/1; permanent population in 1960 from Abstract 1964, No. 15, p. 12, Table B/1.

Figure 1: Sources of Increase of the Jewish Population, 1949-65

Source: Statistical Abstracts of Israel, 1967 (Central Bureau of Statistics).


250,000
200,000
150,000
100,000
50,000
0
Total Increase
Migration Balance
Natural Increase
1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966

the age composition and differences in fertility rates), any demographic analysis must be developed within the context of the origin of the immigrants.

Vital rates

The determinants of population growth rates and composition are the changes in birth, death and migration rates. During the 1960s, the rate of natural increase declined but slightly from the 2.0 level noted for the 1950s. The decrease in natural rates of growth can best be explained by examining the vital events of births and deaths in the Jewish and non-Jewish populations.

Birth rate trends: Figure 2 diagrams crude birth rates from 1951 to 1966. The crude birth rate of the Jewish population declined from 32.7 births per thousand population in 1951 to 22.4 in 1966. In contrast, the crude birth rate for the non-Jewish population increased from 46.5 births per thousand population in 1951 to 49.6 in 1966.

Upon closer examination, significant variation in fertility rates is noted among various Jewish subgroups and non-Jewish subgroups and among geographic areas--an expected fact since the population is not socially homogeneous and the different social backgrounds are not evenly represented within the country. Tables 4 and 5 illustrate some of these variations.

Among the non-Jews, the Muslim population had a crude birth rate of 55.0 per thousand in 1961; the rate among the Druzes was 44.1 and that of the Christians was only 31.8.

The fertility rate of the Jewish population in 1965 varied not only with the mother's continent of birth but also with the year she migrated to Israel and with her age. As Table 4 shows, the rates were highest for the 20 to 29 year-olds and were also higher for the eastern-born immigrants than for western-born and for immigrants 45 years old and younger who had immigrated after 1955. Total fertility from 1960 to 1965 illustrates that fertility among the Israel-born

Figure 2: Birth Rate Trends for Jewish and Non-Jewish Populations, 1951-66

Source: Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).

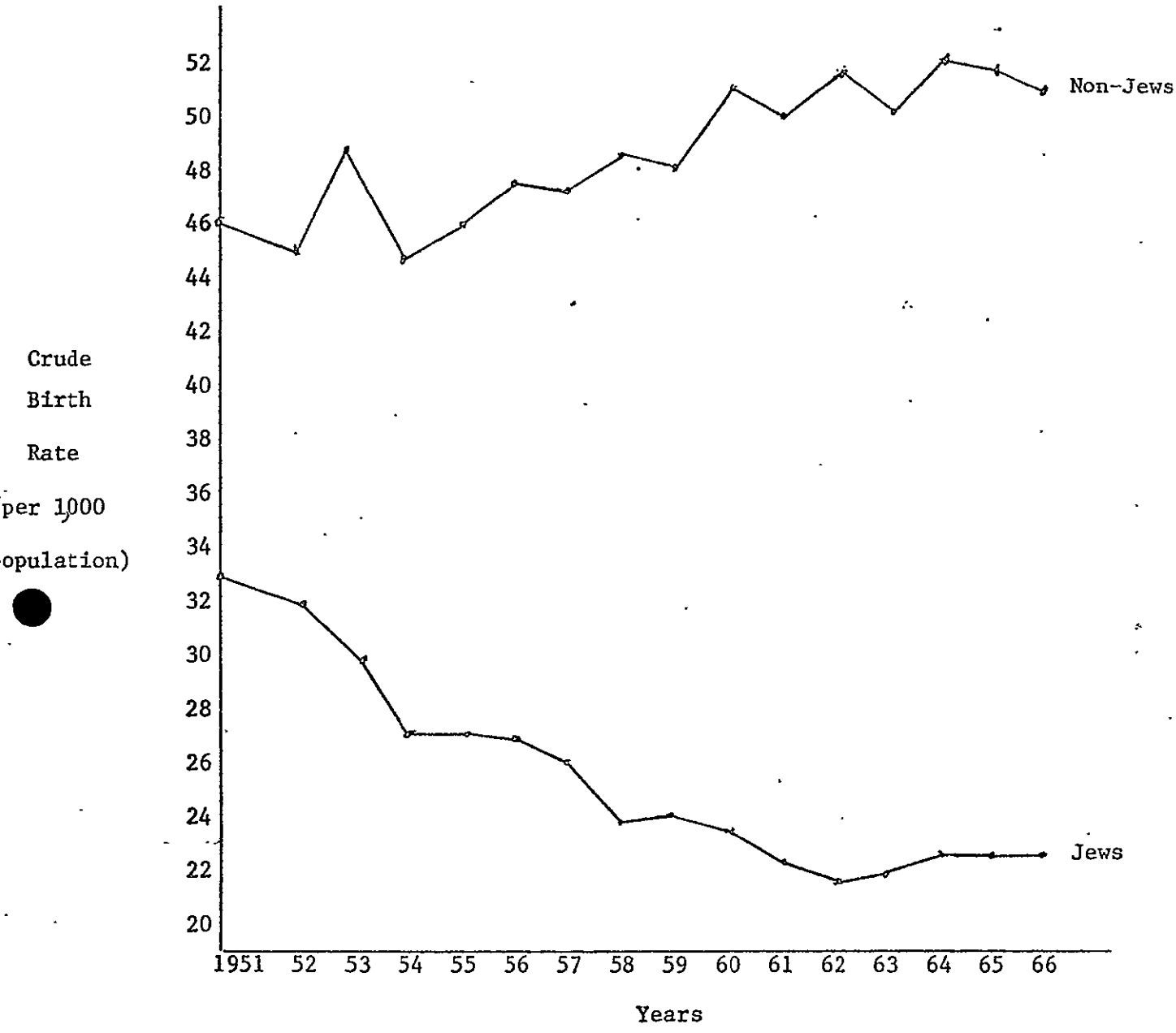

52
50
48
46
44
42
40
38
36
34
32
30
28
26
24
22
20
Crude
Birth
Rate
(per 1000
= population)
Non-Jews
Jews
1951 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66
Years

Table 4

Age Specific Fertility Rates and Total Fertility for Jews, by Mother's Age, Continent of Birth and Period of Immigration

	Europe- and America-born			Asia- and Africa-born			Israel-born	Total
	Immigrated before 1954	Immigrated after 1955	Total	Immigrated before 1954	Immigrated after 1955	Total		
Age Specific Fertility, 1965 (Live Births per 1,000 Women of Reproductive Age)								
Age								
Up to 19	31.7	28.6	30.7	55.7	69.8	61.9	14.8	35.0
20-24	191.5	198.5	95.5	230.8	269.5	246.5	158.6	206.9
25-29	165.1	184.1	73.6	238.0	288.2	256.8	200.6	221.6
30-34	76.5	114.5	84.5	177.0	225.9	192.4	130.3	144.3
35-39	27.9	33.5	29.2	97.2	127.8	107.0	51.6	63.6
40-44	5.8	5.9	5.8	37.7	44.4	40.0	17.4	17.9
45+	0.4	(0.7)	0.5	11.8	9.3	10.9	(2.3)	4.0
Total	41.1	62.0	47.0	133.1	161.1	143.5	92.0	96.8
Total Fertility, 1960-65								
1960-62	2.3	2.4	2.3	4.6	6.1	5.0	2.7	3.4
1963	2.3	2.6	2.4	4.3	5.3	4.6	2.8	3.3
1964	2.4	2.8	2.6	4.3	5.2	4.6	2.8	3.4
1965	2.5	2.8	2.6	4.2	5.2	4.6	2.9	3.5

Source: Based on data from Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).

Table 5

Age Specific Fertility Rates and Total Fertility for Non-Jews, by Mother's Age and Religion

Mother's Age	Druzes and others	Christians	Muslims	Total
Age Specific Fertility, 1965 (Live Births per 1,000 Women of Reproductive Age)				
Age				
Up to 19	87.9	53.4	132.5	111.7
20-24	345.4	242.5	392.6	359.8
25-29	406.1	279.4	448.3	406.2
30-34	326.2	220.0	434.1	370.2
35-39	235.5	114.4	317.9	255.8
40-44	103.9	35.3	177.4	131.0
45+	16.9	3.3	70.4	49.3
Total	238.4	151.5	301.3	261.4
Total Fertility, 1961-65				
1961	7.5	4.9	8.6	7.6
1962	7.2	4.6	9.3	7.2
1963	7.8	4.6	9.8	7.8
1964	7.8	4.7	9.9	8.4
1965	7.7	4.7	9.9	8.4

Source: Based on data from Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).

women is greater than among the western-born immigrants, in general, but less than among eastern-born women.

The highest fertility rate among the non-Jewish population occurred in the 25 to 29 year-old group of Muslim mothers. Furthermore, Muslim fertility consistently increased from 1961 to 1965, whereas the rate declined among Christians and fluctuated with a slight upward trend among Druzes.

Table 6 shows geographical distribution of live births, deaths and infant deaths. In 1966 the lowest birth rate for the Jewish population, 18.4 births per thousand population, was reported for the Haifa district while the highest was in the Southern district, 32.3 per thousand. Among non-Jews, birth rates were highest in the Southern district (53.1 births per thousand population) and lowest in the Tel Aviv district (35.5 per thousand).

Death rate trends: Although some significant changes in the birth rates occurred between 1951 and 1966, crude death rates remained more or less the same for the Jewish population during this period but showed dramatic decline for the non-Jewish population, as Figure 3 illustrates. Both rates stabilized around the 6.0 level. Among the non-Jewish population groups, the Druzes had the lowest death rates while the Muslims registered the highest (see Table 7).

The most dramatic decline in death rates has been in the infant mortality rates of both the Jewish and non-Jewish populations. Both groups have experienced a declining trend in infant mortality since 1951 although the Jewish infant mortality rates have been consistently lower than those of non-Jews, as Figure 4 shows. The Jewish infant mortality rate is levelling off at around 20 deaths per thousand live births, while the non-Jewish rate remains close to 40. Among the non-Jewish population groups, the lowest infant mortality rates were among Christians, while the highest were recorded for Muslims.

The data in Table 6 illustrate that the death rates and infant mortality rates among Jews were also geographically differentiated. Jews living in the

Table 6

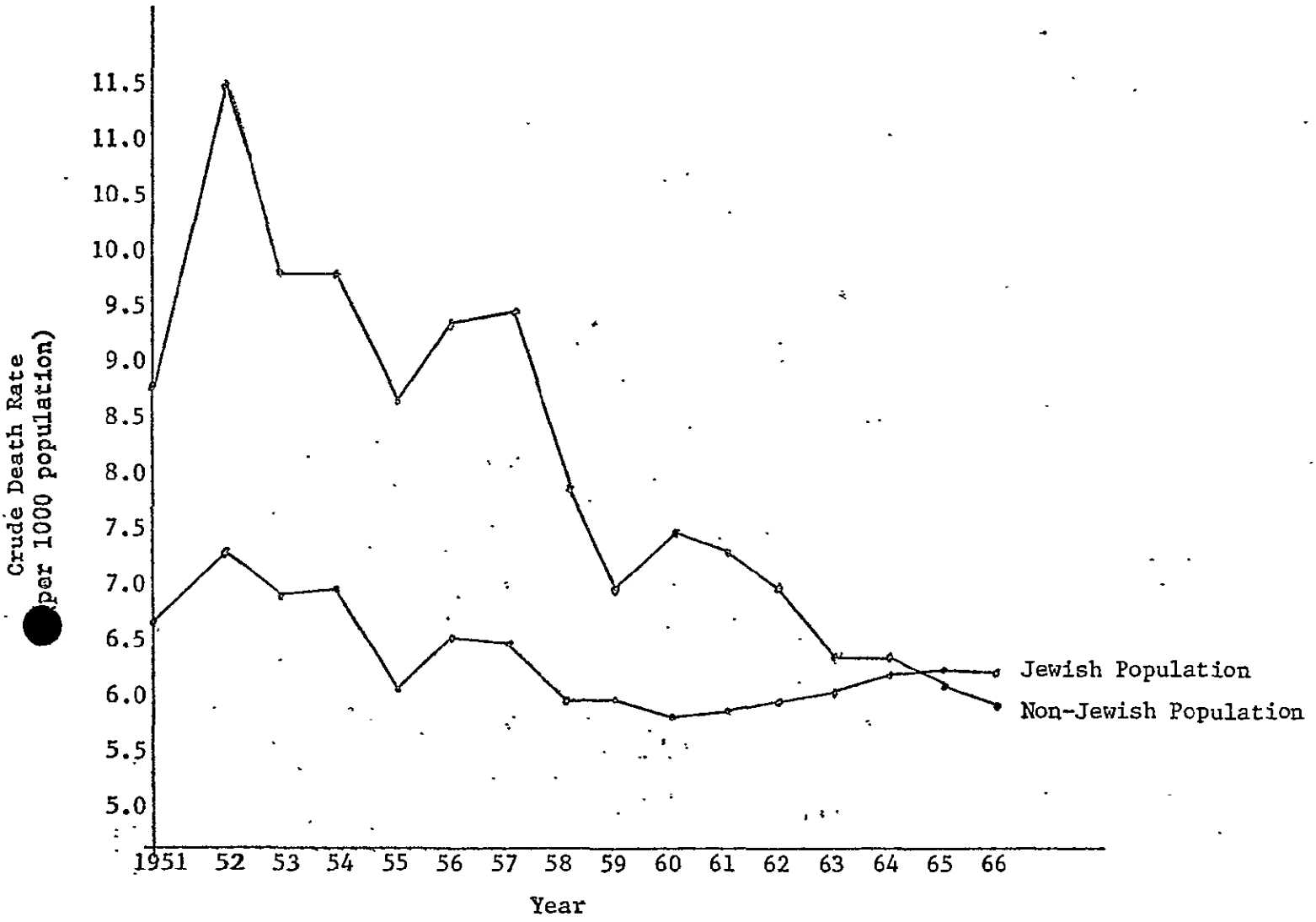
Live Births, Deaths and Infant Deaths for Jews and Non-Jews, by District, 1966

District	Live Births (per 1,000 population)	Deaths (per 1,000 population)	Infant Deaths (deaths in first year of life per 1,000 live births)
		Jews	
Jerusalem	26.4	6.4	23.8
Northern	25.3	5.7	26.7
Haifa	18.4	7.4	19.8
Central	22.2	6.0	22.0
Tel Aviv	19.2	6.7	20.0
Southern	32.3	4.7	20.1
Total	22.4	6.3	21.6
		Non-Jews	
Jerusalem	36.5	6.9	(51.7)
Northern	49.2	6.3	42.4
Haifa	50.5	5.1	37.4
Central	51.8	4.8	34.8
Tel Aviv	35.5	8.8	(31.0)
Southern	53.1	5.8	(16.9)
Total	49.6	5.9	38.2

Source: Based on data from Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).

Figure 3: Crude Death Rate Trends for Jewish and Non-Jewish Populations, 1951-66

Source: Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).



*The crude death rate of the Jewish population had been higher than its current trends. It seems, however, that by mid 1946, the current low trend had been established.

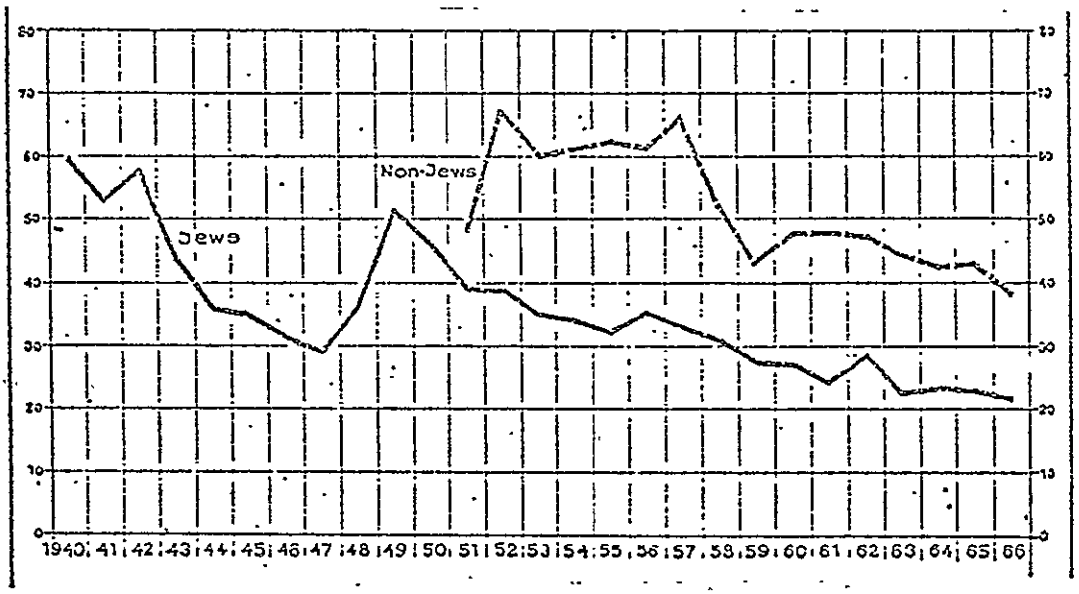
Table 7

Live Births, Deaths and Infant Deaths for Non-Jews,* 1951-66

Year	Live Births (per 1,000 population)	Deaths (per 1,000 population)	Infant Deaths (deaths in first year of life per 1,000 live births)
1951	46.5	8.8	48.8
1952	45.6	11.5	67.9
1953	48.4	9.7	60.1
1954	45.1	9.7	61.2
1955	46.0	8.6	62.5
1956	47.1	9.3	61.5
1957	46.7	9.4	66.8
1958	48.0	7.9	52.7
1959	47.4	6.9	43.8
1960	50.3	7.5	48.0
1961	49.3	7.3	48.0
1962	50.6	6.9	47.5
1963	48.8	6.3	44.6
1964	51.4	6.4	42.6
1965	50.7	6.1	43.4
1966	49.6	5.9	38.2
Muslims	55.0	6.1	39.5
Christians	31.8	5.7	30.5
Druzes and others	44.1	5.1	37.3

*Excluding statistics for Bedouins in the Negev up to 1962.

Figure 4: Infant Mortality Rates
1940-66


Non-Jews
Jews
1940 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66

Southern district in 1966 had the lowest death rates (4.7 deaths per thousand population); those living in the Haifa district had the highest rates (7.4). The non-Jewish population living in the Tel Aviv district experienced the highest rates in 1966 (8.8) while those living in the Central district had the lowest (4.8). Infant mortality was, however, highest for the Jews of the Northern district (26.7); for the non-Jews, those of the Jerusalem district reported the highest infant deaths (51.7) in 1966.

Migration trends: As noted in Figure 1, immigration of Jews to Israel, after reaching a high point in 1949, began a downward trend with two significant peaks subsequently, one in 1957 and one during the 1962-64 period. Emigration, on the other hand, witnessed three main peaks, one in 1952, the next in 1958 and the third in 1963. On the whole, however, net immigration, as seen in Figure 5, was always positive except for the slight negative level of 1953. Immigration constituted about 25 to 91 percent of the total increase in population. In total, net immigration during the period 1948 to 1965 accounted for about two thirds of the increase in population.

The demographic characteristics of the immigrants have varied over time. For example, females have outnumbered males in all time periods except that of 1948-51, the ratio of females to males being 104 in 1952-57, 110 in 1958-64, 112 in 1965 and 123 in 1966. With respect to marriage, fewer immigrants aged 15 and above, either male or female, have been married.

As net migration approaches zero,* the dynamics of population change will be more closely entwined with the natural increase of both Jewish and non-Jewish populations.

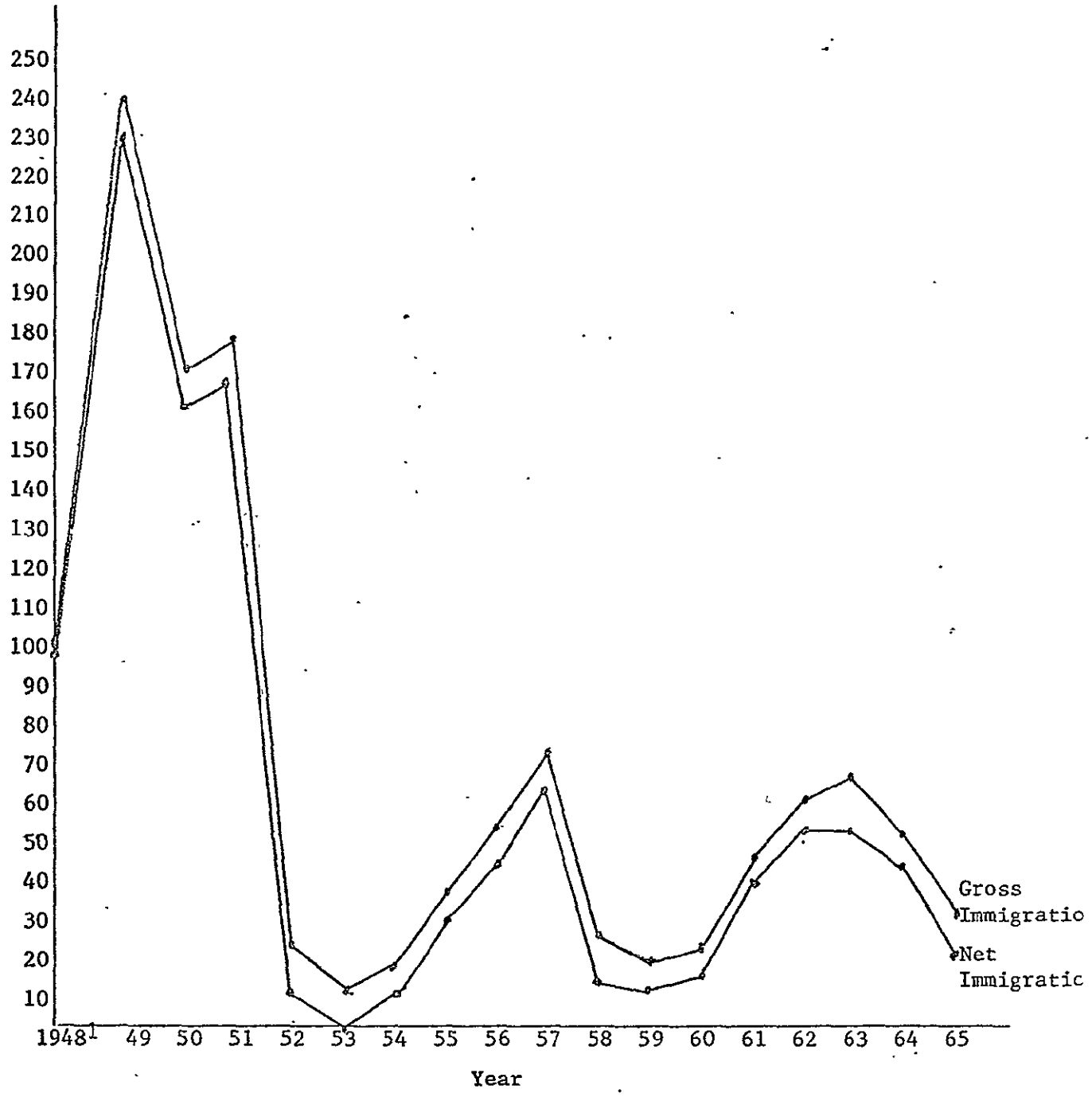
Population composition

Age composition trends: Figure 6 shows population pyramids for both Jewish and non-Jewish groups. The total Jewish population is growing younger. The median age decreased by 2.3 years between 1948 and 1966 in spite of the fact

*This assumes no surge of immigrants from the U.S.S.R.

Figure 5: Jewish Migration Trends, 1948-65

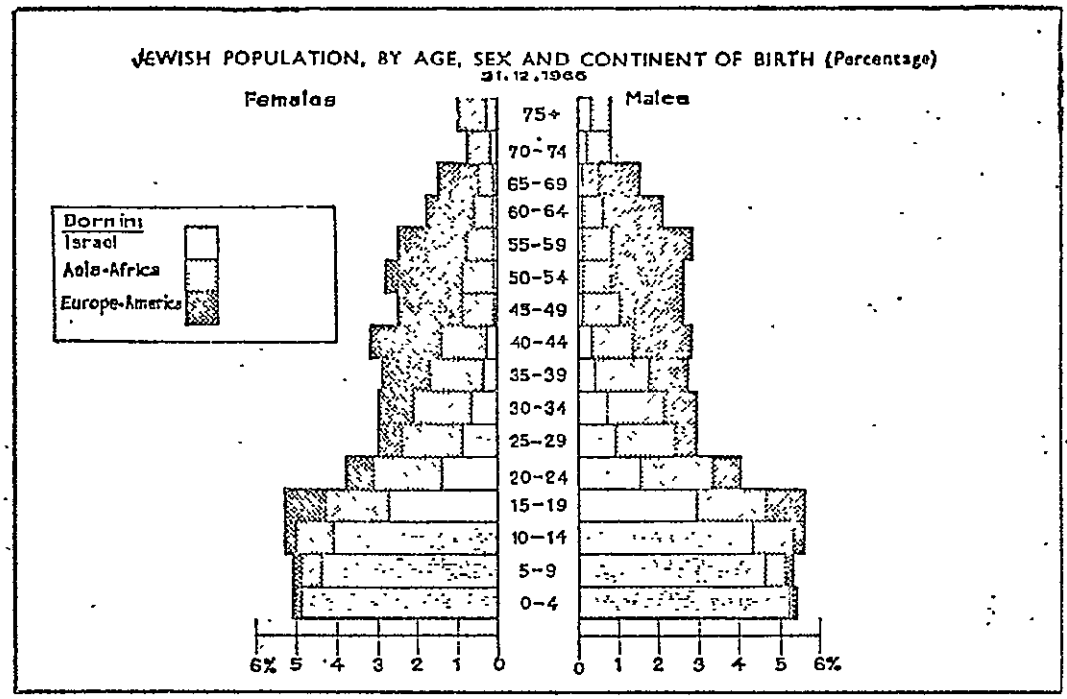
Sources: Statistical Abstract of Israel, No. 17 (Central Bureau of Statistics, 1966), pp. 91, 103

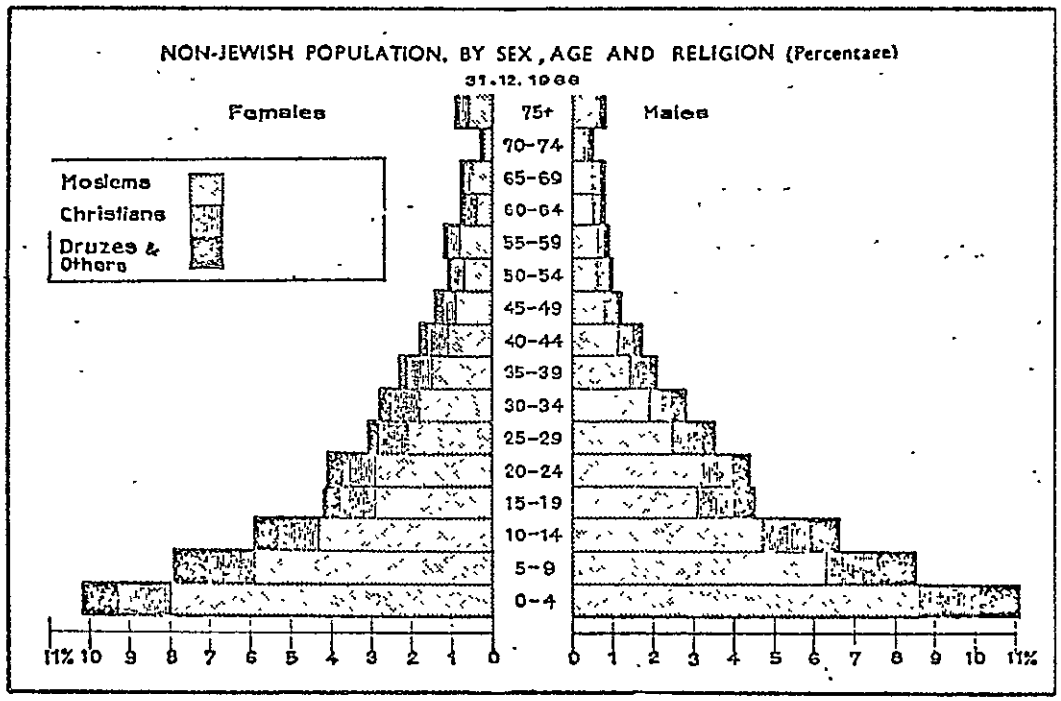


[1]From May, 1948.

Figure 6: Population Pyramids
Jewish and Non-Jewish Populations, 1966

Source: Statistical Abstract of Israel, 1967
(Central Bureau of Statistics)


JEWISH POPULATION, BY AGE, SEX AND CONTINENT OF BIRTH (Percentage)
31.12.1966
Females
Males
Born in:
Israel
Asia-Africa
Europe-America
75+
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
6% 5 4 3 2 1 0
0 1 2 3 4 5 6%


NON-JEWISH POPULATION, BY SEX, AGE AND RELIGION (Percentage)
31.12.1966
Females
Males
Moslems
Christians
Druzes & Others
75+
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
11% 10 9 8 7 6 5 4 3 2 1 0
0 1 2 3 4 5 6 7 8 9 10 11%

that the age group of persons 65 and over increased from 3.9 percent to 6.4 percent of the total population during the same period. Furthermore, although the 0-4 age group declined from 1948 to 1966, the 0-14 age group increased from 28.6 percent in 1948 to 31.7 percent in 1966. Because of such shifts, the dependency ratio of the Jewish population changed from 48 in 1948 to 61 in 1966.

Age distribution differed among the Jewish subgroups by country of origin and by religion among the non-Jewish population. In general the population pyramid was steeper for the eastern Jews than for the western Jews and much more steeply pronounced for the non-Jews. The non-Jewish population is much younger than the Jewish population because of their relatively higher birth rate. In 1948, the average age for the non-Jews was 23.0 years; by 1966 this figure had declined to 21.1 years. Similarly, the median age of 17.0 years in 1948 decreased steadily until it reached 15.0 years in 1966.[9]

Sex composition trends: A noticeable decline in the proportion of males in the total Jewish population occurred during the 1950s, but such a decline did not characterize the 1960s. The sex distribution of the non-Jewish population showed no significant change. Whereas males slightly outnumbered females in both the Jewish and non-Jewish populations, the difference is narrowing among the Jews, although not among the non-Jews.

Urban-rural distribution: In 1961, 77.9 percent of the total population of Israel resided in urban areas. Since that time the percentage of urban population has increased slightly. The high density of urban districts in Israel testifies to the heavy urban concentration; in 1966, the Tel Aviv district was the most densely populated with 4,769 persons per square kilometer, while the Northern district was the least densely populated, with 125 persons per square kilometer.

As to the non-Jewish population, no major locational shifts occurred during the period 1948 to 1966. The Northern district continued to have the

largest proportion of non-Jews, the non-Jewish population of the Haifa district increased somewhat (from 17.6 percent to 19.7 percent of total non-Jews), and in the Southern district the non-Jewish population decreased (from 9.9 percent in 1948 to 7.6 percent in 1966).

Family formation and dissolution

Marriage and divorce rates have fluctuated over time with a stabilizing trend appearing in both since the mid-1950s. Marriage rates have ranged from about seven to 14 per thousand population; divorce rates, from one to four divorces per thousand population.

For Jews, the age at marriage varied with continent of birth, period of immigration and religion. In 1965, the median age at marriage for western-born male Jews was about 26.6 years regardless of when they immigrated. For eastern-born male Jews, immigrants after 1955 tended to marry at a slightly younger age (24.2 years) than did earlier immigrants (25.1 years). For western-born female immigrants, those who came before 1955 married earlier (19.5 years) than did later immigrants (21.8 years), while eastern-born brides showed very little difference regarding period of immigration. Among western-born Jews, the trend has been toward marriage at a younger age despite the period of immigration. For non-Jews, males showed a median age at marriage of 24.4 years in 1965, an increase from the 1956 figure of 23.1 years. Druzes had the youngest median age at marriage, 22.9 years, followed by Muslims, 23.8 years and Christians, 27.3 years. All followed the general trend toward older age at marriage. The median age at marriage for females, which was 20.0 years, also shows an increasing trend. Again, Druzes showed the lowest median age, 18.8, followed by Muslims, 19.9, and Christians, 21.2 years. Only Muslims followed a clear-cut trend of increasing age at marriage. The Christian trend was unstable, but generally increasing from 20.7 years in 1956. The trend among Druzes and others has also been varied but apparently toward marriage at a younger age. The median age

at marriage for this group in 1956 was 19.4.[10]

Other measures of fertility

Parity and family size will be considered here as other means of measuring fertility. Table 8 indicates live births by age of mother and live birth order. The disparity in the size of families can be noted in the number of live births of the sixth order to women in the 25 to 29 year age group. In spite of the fact that non-Jews are only 11 percent of the population, the absolute numbers in the non-Jewish and Jewish groups are 1,402 and 1,603, respectively. An examination of the rates reveals the extreme differences in the size of families between the two groups.

Average family size among Jewish immigrants, which increased through the 1950s and early 1960s with the influx of relatively large eastern families, then began a decline through 1966, with a greater percentage of immigrants entering the country alone or with one or two dependents. The average number of persons accompanying each family head was 2.42 in 1966, 2.52 in 1965, and 2.97 in 1961-64. At the same time, the percentage of persons coming alone rose from 10.51 percent of total immigrants in 1961-64 to 19.0 percent in 1966.

Average family size in 1966 was largest for recent eastern-born immigrants (4.9) and smallest for all western-born immigrants irrespective of year of immigration (3.0). Geographic variation of average family size was prominent among village settlements, collective settlements and urban areas. The largest average family size was noted among the moshavs (5.0) while the lowest was among the kibbutzim (2.4). In urban areas the largest family size was found in Jerusalem and the smallest in Tel Aviv and Yafo.

Population projections

Attempts to project population size and composition are fraught with difficult problems relating to the uncertainty of the number and origin of immigrants in the coming years, the disposition of the occupied territories,

Table 8

Live Births by Age of Mother and Live Birth Order, 1965

Age of Mother	Average Births	Live Birth Order 1	2	3	4	5	6+	Total
				Absolute Numbers				
Jews								
Up to 19	1.2	3,262	645	66	14	2	4	3,998
20-24	1.8	7,660	4,941	1,871	744	266	109	15,607
25-29	3.0	2,867	5,031	3,148	1,653	1,197	1,603	15,527
30-34	4.4	777	1,730	2,265	1,250	891	3,174	10,117
35-39	5.6	230	452	759	501	377	2,187	4,513
40-44	6.6	51	84	112	114	84	835	1,283
45+	7.2	14	10	9	12	10	171	227
Not known	-	10	7	4	3	4	10	39
Total	3.0	14,871	12,900	8,234	4,291	2,831	8,093	51,311
Non-Jews								
Up to 19	1.5	785	434	107	18	4	3	1,351
20-24	2.6	953	1,201	1,014	656	280	103	4,210
25-29	4.7	269	347	494	624	778	1,402	3,919
30-34	6.8	93	89	135	190	306	1,968	2,789
35-39	8.6	26	27	25	47	78	1,409	1,615
40-44	9.2	9	6	9	12	17	625	691
45+	8.2	9	4	10	6	12	148	194
Not known	-	7	11	3	10	8	23	66
Total	4.9	2,151	2,119	1,797	1,563	1,483	5,681	14,835
				Rates				
Jews								
Up to 19		28.6	5.7	0.6	0.1	(0.0)	(0.0)	35.0
20-24		101.7	65.6	24.8	9.9	3.5	1.4	206.9
25-29		41.0	72.8	45.0	23.6	17.1	22.9	221.6
30-34		11.1	24.7	32.4	17.9	12.8	45.4	144.3
35-39		3.2	6.4	10.7	7.1	5.3	30.9	63.6
40-44		0.7	1.2	(1.6)	1.6	1.2	11.6	17.9
45+		0.2	0.2	(0.2)	0.2	0.2	3.0	4.0
Total		28.0	24.3	15.5	8.1	5.3	15.3	96.8
Total Fertility		0.9	0.9	0.6	0.3	0.2	0.6	3.5
Non-Jews								
Up to 19		64.9	35.9	8.9	(1.5)	(0.3)	0.2	111.7
20-24		81.5	102.8	86.4	56.6	23.8	8.7	359.8
25-29		27.9	36.0	51.2	64.9	80.7	145.5	406.2
30-34		12.3	11.8	18.0	25.1	41.0	262.0	370.2
35-39		4.1	4.3	3.9	7.4	12.3	223.8	255.8
40-44		(1.7)	(1.1)	(1.7)	2.3	3.2	121.0	131.0
45+		(2.3)	(1.0)	2.5	(1.5)	3.0	39.0	49.3
Total		37.9	37.3	31.7	27.6	26.2	100.7	261.4
Total Fertility		1.0	1.0	0.9	0.8	0.8	4.0	8.4

Source: Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).

and the differential growth rates of population subgroups. Thus, any attempt to provide meaningful projections of future population size and composition must be interpreted with great caution.

Based on the estimated population at the end of 1965, the Central Bureau of Statistics ran population projections for Israel to 1985.[11] The projections were made with varying assumptions of net migration and specified assumptions regarding the fertility and mortality experiences of the three main sub-populations--the eastern Jews, the western Jews and the non-Jews. The main assumptions were the following:

1. The specific fertility assumptions were:

    a. The fertility rate of western-born Jews or Israel-born of western fathers will not decline below its average level in the 1963-65 period.

    b. The fertility rate of eastern-born Jews will decrease from the 1963-65 level to the present level of eastern-born who immigrated before 1947.

    c. The fertility rate of oriental Jews born in Israel, but whose fathers were born in Asia or Africa and immigrated to Israel during and after the 1948-51 wave of immigration will start at the same level as those who immigrated before 1948 and then decline to the level of the western Jews.

    d. The goal for fertility rates of the non-Jewish population will be (i) for Muslim and Druze women to reduce the rate by one-half the difference between the Muslim and Druze 1963-65 levels and that of the Christian 1963-65 level and (ii) for Christian women to reduce the rate to the 1963-65 level of the eastern Jews who immigrated to Israel up to 1947.

2. Infant mortality of non-Jews will further decline gradually until it reaches (by 1985) the average level among Jews in 1963-65.

3. The annual rate of new immigrants will be reduced from its present level. For simplicity's sake, it was assumed that all immigrants arrive at once in the middle of a five-year interval during the projection period. Two hypothesized levels of immigration were proposed: 15,000 per year with 5,000 originating in Asia and Africa and 10,000 originating in Europe and

America or 25,000 per year with 5,000 originating in Asia and 20,000 in Europe and America.

According to the projections made, given the above assumptions, the total population in 1985 could range from 3.6 million to 4.1 million. Without any new immigrants, the 1965 total of 2.6 million could reach 3.6 million (a growth rate of 1.6 percent per year) and the Jewish population could grow from 2.3 million to 2.9 million in 1985 (a growth rate of 1.2 percent per year). If the annual number of immigrants reaches 15,000 with twice as many western-born as eastern-born, then the population growth rate for the period 1965-85 could reach two percent per year with a total population of 3.9 million (3.3 million Jews). However, if the annual number of immigrants reaches the 25,000 mark with four times as many westerners as easterners then total population could reach the 4.1 million mark (an annual growth rate of 2.3 percent per year).

Implications of projected size and composition: Changes in the rates of any vital events will cause the ethnic and age composition of the total population to alter. The Bureau of the Census results summarize well the implications of population growth as projected:

> In all the hypotheses concerning immigration, there will be a rise in the percentage of Israel-born among the Jewish population--from 40.4 to 67.4 in the population without new immigrants, to 62.9 under hypothesis A and 60.3 under hypothesis B.
>
> As to the age composition of the total Jewish population, there are only slight differences between the expected developments without new immigrants or according to hypotheses A and B concerning the extent of the immigration, the percentage of the children will decrease slightly at the beginning of the projection period and will thereafter remain fairly constant; on one hand there will be an increase in the percentage of adults between 15 and 44 and on the other hand in the percentage of old people (65 and above); as against this the proportional share of those between 45 to 64 will decrease.
>
> With Asia-Africa born the percentage of the young (0-29) will decrease in the hypotheses from 47.9 to 13.7 because of the small immigration expected, as compared with the mass immigration in the past; whereas with Europe-America born the share of these

age groups will decrease from 18.9 percent to 13 percent under hypothesis A of the immigration, but under hypothesis B their share will increase slightly--to 19.1 percent. The percentage of those aged 45 and above among Europe-American born was 56 percent in 1965 and will, according to hypothesis A, reach 67 percent in 1985 and 60 percent according to hypothesis B. The higher the age, the higher will be the proportional share of the European-born out of all Jews and foreign born.

With non-Jews, despite the expected decrease in the specific fertility rates, there will not occur a similar decrease in the gross rate of births; the decrease will be more gradual. This is because of the relative increase of the fertility age groups; for example, the 15-29 age group of females will increase from 23.5 to 27.9.

The share of the non-Jewish population out of the total population will increase under all hypotheses: from 11.5 to 18.3 of the population without new immigrants, to 16.7 under hypothesis A and to 15.9 under hypothesis B.

In the internal composition of non-Jews, the share of Moslems will rise from 71.0 percent to 76.2 percent, the share of the Druzes will remain constant, and the share of the Christians will decrease from 19.1 to 14 percent.[12]

The impact of changes in the age, sex and ethnic composition of the population will reverberate throughout the many structural relationships that hold the economy and society together. The most immediate effects will be felt in increased demand for social services such as schooling, housing, welfare and health plus demands for more and better jobs. The subsequent impact of such changes will become evident through changes in the demand (size and composition) for investment capital.*

EPIDEMIOLOGIC SITUATION

Epidemiologic situation

Proportionate and sex specific mortality: In general the greatest percentage of all deaths in a given age group during the period 1965-69 occurred in the

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*The full impact of such changes is too complex to be confined to this brief discussion. For details, see N. Lowenthal and A. David's concept for research related to Israel's population policy at the Center for Population Research and Services of the Research Triangle Institute, North Carolina.

one-to-four-year-old group among Jews but in the less-than-one-year-old group among non-Jews. Furthermore, female mortality rates during the same period improved more than those of males, and those for non-Jews improved more than rates for Jews.

Changes in life expectancy: The average expectation of life for Jews in Israel consistently increased for both males and females between 1949 and 1966, as shown in Table 9. During this period, average life expectancy for males increased by 5.7 years while that of females increased by 5.8 years.

Changes in cause-of-death ratio and leading causes of death: A comparison of incidence rates and disease specific mortality rates of eastern-born and western-born Jews shows that the health patterns of the two groups differ. As the data in Table 10 show, the death rate of easterners aged 15 and over as a whole is lower than that of westerners of the same age group (7.3 deaths per thousand population as compared with 12.0), as would be expected since the easterners are a relatively younger population.

By determining the percentage of deaths due to specific causes, some knowledge can be gained about disease patterns by continent of birth. Heart diseases account for 38.9 percent of all deaths to western-born Jews and 31.6 percent of deaths to eastern-born Jews. Other diseases which are significant causes of death include vascular lesions (12.7 percent of western-born deaths and 17.3 percent of eastern-born deaths), malignant neoplasms (22.5 percent and 13.9 percent, respectively) and hypertension (1.2 percent and 1.4 percent, respectively).

Figure 7 compares causes of death for 1952 and 1966. In 1952 coronary heart disease accounted for only 12 percent of all deaths, whereas in 1966 coronary heart disease was the leading cause of death, accounting for about 26 percent of all deaths. Of note is the decrease in causes of death common to infancy and early childhood. Deaths due to gastroenteritis were five percent of the total in 1952 but dropped to about one percent in 1966. Deaths from pneumonia and diseases of early infancy have also declined.

Table 9

Expectation of Life at Specified Ages (C_x), by Sex for Jews, 1949-66

Age	Males						Females					
	1949	1950	1955	1960	1965	1966	1949	1950	1955	1960	1965	1966
0	65.2	66.3	69.4	70.7	70.5	70.9	67.9	69.5	72.1	73.5	73.2	73.7
5	65.4	65.9	67.5	68.2	67.7	68.0	67.4	68.6	69.9	70.8	69.9	70.4
10	60.9	61.2	62.7	63.5	62.8	63.1	62.7	63.9	65.0	65.9	65.0	65.5
15	56.2	56.4	57.9	58.6	58.0	58.2	57.9	59.0	60.2	61.0	60.1	60.6
20	51.5	51.9	53.2	53.9	53.2	53.4	53.1	54.2	55.3	56.1	55.2	55.8
25	46.9	47.4	48.6	49.1	48.5	48.7	48.4	49.5	50.5	51.3	50.3	50.9
30	42.2	42.7	43.9	44.4	43.7	44.0	43.7	44.8	45.7	46.5	46.5	46.0
35	37.5	38.1	39.2	39.6	39.0	39.2	39.0	40.1	41.0	41.7	40.7	41.2
40	32.8	33.4	34.4	34.9	34.3	34.5	34.4	35.5	36.3	37.0	35.9	36.5
45	28.3	28.8	29.7	30.3	29.8	29.8	29.8	30.9	31.8	32.3	31.3	31.8
50	23.8	24.4	25.3	25.8	25.3	25.4	25.5	26.4	27.3	27.8	26.8	27.3
55	19.7	20.4	21.1	21.6	21.1	21.2	21.4	22.2	23.0	23.5	22.5	22.9
60	16.0	16.6	17.3	17.8	17.2	17.3	17.3	18.2	19.0	19.5	18.4	18.8
65	12.8	13.4	14.0	14.4	13.8	13.9	13.6	14.6	15.2	15.7	14.8	15.1
70	10.0	10.7	11.2	11.5	10.9	11.0	10.2	11.4	12.0	12.6	11.6	11.8
75	7.7	8.3	9.1	8.7	8.5	8.5	7.6	9.0	9.3	9.9	8.8	9.1

Source: Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).

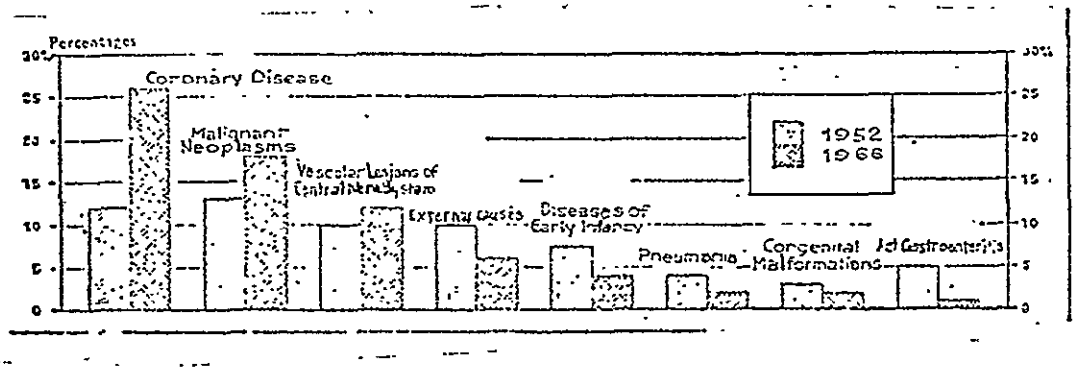
Table 10

Deaths by Sex, Age, Continent of Birth and Cause (1966) and Death Rates by Cause (1950-66) for Jews

Cause	Under 1 Year	All Ages			Aged 15 Years and Over		
		Females	Males	Total	Born in Europe-America	Born in Asia-Africa	Total Population
	Absolute Numbers				Deaths per 1,000 Population		
1. Tuberculosis of respiratory system	-	29	39	68	0.065	0.040	0.043
2. Tuberculosis, other forms	-	2	3	5	0.004	0.003	0.003
3. Syphilis and sequelae	1	3	7	10	0.007	0.007	0.006
4. Typhoid fever	-	1	-	1	-	0.002	x
5. Cholera	-	-	-	-	-	-	-
6. Dysentery, all forms	-	3	-	3	0.003	0.002	0.002
7. Scarlet fever and streptococcal sore throat	-	-	-	-	-	-	-
8. Diphtheria	-	-	-	-	-	-	-
9. Whooping cough	-	-	-	-	-	-	-
10. Meningococcal infections	-	-	3	3	-	-	x
11. Plague	-	-	-	-	-	-	-
12. Tetanus	-	-	1	1	-	0.002	x
13. Acute poliomyelitis	-	-	-	-	-	-	-
14. Smallpox	-	-	-	-	-	-	-
15. Measles	11	9	11	20	-	-	0.001
16. Typhus, epidemic	-	-	-	-	-	-	-
17. Typhus, endemic and unspecified	-	-	-	-	-	-	-
18. Other forms of typhus and other rickettsial diseases	-	-	-	-	-	-	-
19. Malaria	-	-	-	-	-	-	-
20. All other diseases classified as infective or parasitic	24	43	40	83	0.035	0.028	0.029
21. Malignant neoplasms	5	1,315	1,340	2,655	2.706	1.016	1.643
22. Benign and unspecified neoplasms	1	62	68	130	0.114	0.065	0.076
23. Diabetes	-	57	51	108	0.084	0.077	0.068
24. Anemia	2	13	9	22	0.013	0.010	0.011
25. Vascular lesions affecting central nervous system	-	996	863	1,859	1.530	1.264	1.177
26. Non-meningococcal meningitis	11	9	20	29	0.012	0.005	0.008
27. Rheumatic fever	-	2	1	3	-	0.003	0.002
28. Chronic rheumatic heart disease	-	149	83	232	0.162	0.164	0.144
29. Coronary disease/angina pectoris	-	1,298	2,256	3,554	3.738	1.427	2.253
30. Other arteriosclerotic and degenerative heart diseases	-	291	252	543	0.437	0.381	0.344
31. Other heart diseases	12	154	148	302	0.197	0.232	0.177
32. Hypertension with heart disease	-	90	67	157	0.139	0.103	0.099
33. Hypertension without mention of heart disease	-	52	44	96	0.075	0.073	0.061
34. Influenza	-	7	9	16	0.012	0.012	0.009
TOTALS	1,121	6,709	8,000	14,709	12.026	7.304	8.373

Source: Statistical Abstract of Israel, 1967 (Central Bureau of Statistics).

Figure 7: Changes in Main Causes of Death
1952 and 1966


Percentages
30%
25
20
15
10
5
0
Coronary Disease
Malignant Neoplasms
Vascular Lesions of Central Nervous System
Accidents
Diseases of Early Infancy
Pneumonia
Congenital Malformations
Gastroenteritis
1952
1966

Muhsam concluded that both for arteriosclerotic and other degenerative heart diseases and for malignant neoplasms, the mortality rates among persons born in Europe are much higher than among those born in Asia or Africa due to the following:

> . . . physical and mental implications of economic activity and occupation, and nutritional preferences . . . two aspects of the occupational patterns are suspected to be connected with the excess of mortality from degenerative diseases in higher classes: one is the considerable prevalence [sic] of highly sedentary occupations among vetera settlers of European origin, and the other is the nervous tensions and mental stresses required from many of them in their social and economic activities.[13]

As to the nutritional differences, Muhsam contended that the eating habits of the two Jewish sub-populations, although well documented, do not "permit any final conclusions on causal relationships."[14]

Health services

When the adequacy and efficiency of the general services of Israel are measured by specific health indicators such as general mortality and morbidity statistics, the health services rank high on a comparative scale. This high ranking is in part the result of the availability of the necessary inputs for a good health service--physicians and hospital beds. Table 11 shows numbers of medical personnel and the ratio of available personnel to population from 1952 through 1966. The population/physician ratio was 428 people per physician in 1966.

A total of 644 maternal and child health centers served 154,451 families in Israel at the end of 1965; in 1955 there were only 435 such centers in the country. Of the centers in 1965, 612 were under the auspices of the Ministry of Health and the General Workers' Sick Fund. The number of children aged one to four under the supervision of the centers increased from 56,117 in 1955 to 167,002 in 1965. The number of pregnant women under the care of the centers was 14,785 in 1955 and 22,238 ten years later. The monthly average visits, examinations, home visits and average period of supervision changed very little during this period.

Table 11

Licensed Personnel in Principal Medical Professions* and Population/Personnel Ratios, 1952-66

Profession	1952	1955	1960	1964	1965	1966
			Absolute Numbers			
Physicians	3,717	3,969	5,225	5,831	6,075	6,214
Dental surgeons	908	937	1,123	1,146	1,178	1,211
Dental practitioners	-	403	552	551	599	579
Pharmicists	-	879	1,175	1,384	1,479	1,527
Pharmicists' assistants	-	86	184	222	510	427
Qualified midwives	-	233	292	374	423	460
			Population per Professional Worker**			
Physicians	438	451	412	433	428	428
Dental surgeons	1,805	1,909	1,915	2,202	2,206	2,194
Dental practitioners	-	4,439	3,896	4,580	4,367	4,590
Pharmacists	-	2,035	1,830	1,823	1,757	1,740
Pharmacists' assistants	-	20,803	11,687	11,367	5,095	6,223
Qualified midwives	-	7,678	7,364	6,747	6,143	5,777

*Including holders of temporary licenses
**Based on total population at the end of the year

Source: Based on data from Statistical Abstracts of Israel, 1967 (Central Bureau of Statistics).

There were 66 hospitals in Israel in 1948, and by the end of 1966 there were 140 hospitals among which 34 were government-owned, four were owned by local authorities, 14 by the General Federation of Labor Sick Fund (Kupat Holim), and 63 were private.

The private hospitals provide 4,500 hospital beds, while the government hospitals account for 8,132 beds. The Kupat Holim hospitals have 3,169 hospital beds. Of the 19,418 hospital beds at the end of 1966, less than half, 8,338, were general beds while 8,455 were for mental disease and 1,718 were for chronic diseases. In 1948, hospitals provided 5.55 beds per thousand population; by 1966 this figure had increased to 7.31. The level of occupancy of hospital beds was 88.7 percent in 1950, 90.4 percent in 1955 and 96.5 percent in 1966.

Days of hospitalization per thousand population increased from 179 in 1950 to 255 in 1966. In 1966, 91.4 percent of all deaths among Jews and 62.5 percent of deaths among non-Jews occurred in hospitals. Ninety-nine percent of all live births among Jews and 84.1 percent live births among non-Jews took place in hospitals.

The emphasis on preventive medicine in Israel is exemplified by the intensity of the school health program. In the school year 1964-65, school nurses performed 425.5 examinations per thousand students with 27.9 home visits for every hundred students. Physicians performed 35 routine examinations per hundred pupils in schools. Nurses' examinations were concentrated among primary schools, handicapped children and working youth, while physicians' examinations were concentrated in secondary and tertiary schools.

At the end of 1966, the number of insured people included in the National Sick Fund, General Workers' Sick Fund and People's Sick Fund was 216,000.

POPULATION POLICY AND FAMILY PLANNING PROGRAMS

Overview

It is worth repeating that the growth of the population of Israel has been greatly influenced by the streams of immigrants who brought into the social and cultural setting a mix which proved both healthy and problematic for the growth of the state. The social services that were provided by the state, as well as the economic activities that emerged, were to a great extent conditioned by what the immigrants brought with them in the way of skills, educational level, nutritional habits, consumption patterns, health levels and even fertility norms. Any attempt to understand the socioeconomic factors that influence fertility behavior in Israel and which in turn influence any population policy considerations must be undertaken in the context of geocultural differences among the various groups of immigrants.

In 1965 the size of Afro-Asian Jewish families was five or more in 50 percent of the cases; in contrast, only 15 percent of "western" Jewish families were that large. Furthermore, about 72 percent of eastern-born women were still of childbearing age. Many sociocultural and economic factors may be operating on the fertility pattern, none of which can be adequately weighted in this analysis.

Concomitant with the above facts is that the main objective of the State of Israel is development of an egalitarian Jewish society. This overriding objective has two main components: one, the social and economic goal of an egalitarian society; and the other, the political and religious goal of a Jewish majority in population. What seems to have emerged is a dominant concern with the maintenance of a Jewish state (a population policy question), but a lesser concern with the egalitarian goal. There is an apparent lack of appreciation for the definite two-way relationship that must exist between the two components of the objective.[15]

Present population policy stance

The national leadership of Israel is concerned about the Jewish identity of the state. Abba Eban, Moshe Dayan, Shimon Peres and Pincus Sapher have emphasized the need to maintain a "Jewish State;"[16] each of Israel's prime ministers has made strong policy statements. "The importance of natality for national revival" (after the holocaust in Europe) and survival (of Jews in Israel as well as those outside Israel) was stressed, and the support of pronatalist activities was promised.[17] Other pronatalist factors include no sex education in schools and no publicity regarding family planning services. The National Health Service will not insert IUDs free of charge; neither are induced abortions free or legal.* Such a stance, it is here argued, leads not only to a larger Jewish population but also to significant social and economic problems resulting from the widening disparities between the three sub-populations. This argument does not imply that total population growth should necessarily be reversed or stabilized as long as there are Jews outside Israel and as long as the basic raison d'être for Israel is to provide an open door for any Jew anywhere and at any time. However, as long as there exists no control valve on the growth of population through immigration, let natural growth be regulated through the provision of an atmosphere that encourages small family size; that is, let an antinatalist policy stance be developed in order to reduce the probable consequences of differential fertilities as manifest in part in the social and economic disparities among the three sub-populations. A policy directed toward curbing the rate of natural increase in population by providing social and economic sanctions for smaller family norms must be backed by the availability of family planning services to all the population. Some insight into the probable popular reception of a policy such as the one outlined here may be gained by reviewing several studies conducted in the 1960s.[18]

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*The price for insertion of an IUD varies from 180 ($51.43) to 240 ($68.75) Israeli pounds, which is 18 to 25 percent of the monthly salary of an associate professor. Private physicians charge 100 ($28.57) to 150 ($42.86) Israeli pounds for an induced (illegal) abortion.

Program base for policy formation

Knowledge, attitude and practice (KAP) surveys: The major sources of population program needs are found in the desires and actions of the general population, factors which to a great extent are conditioned by the population's cultural heritage. Thus, for Israel, the need to understand the social and economic backgrounds of the immigrants and the current setting assumes tremendous importance. The observed variations in the fertility patterns of the three sub-populations, as presented in earlier parts of this chapter, find their roots in the basic differences of the three subcultures--the eastern Jews, the western Jews and the non-Jews.

Bachi and Matras in 1959-60 conducted a KAP study of 3,000 postpartum women and related the fertility experiences of the women to age, place of birth, year of immigration to Israel, year of marriage and other socioeconomic factors.[19] Their conclusions may be summarized as follows:

1. Forty percent of the women had used contraception at some time prior to the present birth and ten percent had had induced abortions. Among Israeli and western-born women, the percentage reporting ever having used contraception (60.6 and 64.0, respectively) was over twice that of eastern-born women (24.8 percent). The abortion rates for the westerners were twice those of Israel-born women (21 percent and 11 percent, respectively), and four times those of the easterners, of whom only five percent had had induced abortions.

2. Younger easterners educated in Israel and in the Armed Forces assumed Israeli patterns; for example, 32 percent having second births and 57 percent having third births reported previous contraception. Eighteen percent of the group having a third birth had had a prior abortion, as had six percent of those having first births.

3. For women having a birth order four or higher (a total of 222 women), 33 percent were contraceptors, a substantially lower rate than that for lower parity mothers, 49 percent of whom (175 of a total 360) had contraception experience. It should be noted that a bias is introduced here since most of the 149 women having had four or more live births were eastern-born immigrants. As a whole, relatively few in this last group had either used contraceptives or had abortions.

4. Although women of Asian or African origin born in Israel assumed the contraceptive use and abortion patterns of Israelis, they still tended to show slightly higher fertility. The total fertility rate for Israel-born Euro-Americans was 2.0; for Israel-born Afro-Asians, 2.1. Of the Israel-born Euro-Americans, 66 percent were contraceptors, compared with 55 percent of Israel-born Afro-Asians. Fourteen percent of the Israel-born Euro-Americans and five percent of the Afro-Asians had had induced abortions.

5. The differences in family limitation practices between the various geocultural groups were closely related to differences in educational opportunities and other socioeconomic factors. In relative terms, the greatest number of contraceptors and women who had had induced abortions were from collective settlements. The second largest group resided in Haifa.

6. In terms of desired family size, geocultural differences seemed to play a greater role in explanation of these desires than did educational levels, although fewer of the better educated Israeli- and African- or Asian-born women desired four or more children. For example, among Israeli-born women with five to eight years of education, 21.2 percent desired two children, 53.6 percent desired three children, and 25.2 percent desired four or more. For European- or American-born women, these percentages were 44.9 percent, 44.7 percent and 7.7 percent, respectively. Among Asian- or African-born women, 25.7 percent desired two children; 41.3 percent, three; and 32.5 percent, four. Considering women with nine to twelve years of education, 24.9 percent of the

Israeli-born wanted two children, 57.8 percent wanted three and 16.6 percent desired four or more. Among the western-born women, the corresponding percentages were 42.3 percent, 47.8 percent and 9.9 percent, respectively, and for eastern-born women, 30.9 percent, 48.9 percent and 20.2 percent, respectively.

When asking about the desired number of children, the investigators found that the very notion of wanting to bear a given number of children was entirely strange to some of the respondents. However, about 40 percent had considered the number of children they desired, and approximately half of those wanted three children, about one-third wanted two children, and about one-sixth wanted four children.

7. For women of all continents of birth, fertility is higher and contraception lower among religious women, although about a third of the religious women were contraceptors.[20]

8. The primary methods of contraception used were coitus interruptus, condoms and diaphragms. (During the 1959-60 KAP study neither the IUD nor the pill was included.)

Further analysis of the initial study was done by Matras and Averbach with more emphasis upon religion, employment and education as factors in use of contraception.[21]

Religious basis for policy formation: Given the goal of maintaining a Jewish state, coupled with the impact of "religiosity" on contraception, it is particularly appropriate to review the religious tenets related to procreation.

By and large, Jewish law proclaims "Be fruitful and multiply." In his study of Biblical and Talmudic sources, Grunwald concluded that the law is concerned with the promotion of quality as well as the quantity of the progeny.[22]

He pointed out several pronatalist features of the Jewish law: insistence on early marriage and on the sexual purity of marriage partners, harmony of their ages and characters, dissolubility of unhappy unions, regulation of conjugal intercourse, high esteem of maternity, stress on parental responsibility and protection of the embryo.

Ancient Jewish law cultivated the eugenic ideal by prudent legislation and counsel. Although there was no question of compulsory control over the health conditions of the marriage candidates, such control would have been in line with the principles of Jewish eugenics.

In the Codes an entire chapter is devoted to the obligation to marry and to propagate the race, the fulfillment of which is legally enforceable. To refuse to do so is tantamount to bloodshed and to expelling the "Divine Presence" from Israel. A man has met the requirements of the biblical precept to be fruitful and multiply if he has at least a son and a daughter; yet he should seek to augment his natural increase beyond the minimum duty. Special emphasis is placed on the choice of a partner with the highest intellectual and moral virtues.

A husband is expected to provide his wife not only with food and clothing, but also with conjugal rights. The Talmud states that "the only one of these three things that may not be waived is the conjugal right," and Deuteronomy 24:5 says that a man who marries should be deferred from military service for a year so that he can "rejoice his wife," considering the quality as well as the frequency of sexual relations.

With regard to <u>sterilization</u>, Judaism--the only religion in antiquity to do so--imposes a religious prohibition on the emasculation of men and animals alike. Sterilization either by surgery or by oral potion is forbidden to men, but women may take an oral potion. However, modern Orthodox Judaism is not opposed to sterilization if the medical opinion is that future childbearing will always remain a threat to a woman's life and if such opinion is rabbinically sanctioned. Nevertheless, a man may never be sterilized for the purpose of

permanent contraception.

In order to understand attitudes toward abortion, it is useful to consider the status of the fetus in Judaism. Until the moment of labor, the fetus is an organic part of the mother. Surgical interference with a dead pregnant woman is prohibited as unwarranted desecration of the dead. Although the life of the fetus is not protected by legal provisions, the artificial termination of a pregnancy is strongly condemned on moral grounds unless justified for medical or other grave reasons.

> During the process of birth and until the child's head or the greater part of its body has emerged, its life is still of inferior value but vested with a certain measure of human inviolability. Its life may and must be set aside in the mothers (sic) interest only if it is the child (and not some illness) that threatens her life. During these two phases it would be a criminal violation of the sanctity of human life to let the mother die (in the aforementioned circumstances) by refusing to destroy her fruit.[24]

The child's viability is not fully established until the thirty-first day of its existence; after that day the child enjoys human rights in every respect.

Rabbi David M. Feldman pointed out that the judgement of Rabbi Moses Sifer in 1839 that no woman "is required to build the world by destroying herself" tends to make the primary concern in the laws of abortion the welfare of the woman. Guttmacher noted that abortion is mentioned only once in the Old Testament, Exodus 21:22-23, where it is stated that if harm befell the woman, the abortionist "shalt give life for life," or be subject to a fine.[25] The scant mention accorded abortion in the Bible suggests that the practice was rare.

Abortion on medical grounds is not mentioned in the Talmud. Current interpretations not only sanction therapeutic abortion but also demand it when the pregnancy is a physical or psychological hazard to the mother.

With regard to other means of contraception, the Old Testament refers in Genesis 38:7-10 to the Lord's slaying Onan for practicing coitus interruptus.

However, it is unclear whether the offense of Onan was the use of a contraceptive method or his failure to fulfill the law by marrying his brother's widow in order to "raise up seed" for his deceased childless brother. Modern Orthodox Jewish scholars have accepted the use of oral contraceptives. IUDs have been used in an Orthodox Jewish hospital in Jerusalem and by individual Orthodox Jews. Interestingly, Pathfinder Fund research results indicated that the expulsion rate of IUDs and indications for removal are higher among the more orthodox women. The rhythm method is not acceptable to many rabbinical authorities because it creates an obstacle to normal sex life between husband and wife.

In general where life and health are at stake, the rabbis stand on the side of leniency. According to Rabbi Ben Zion Bokser,

> There are subjective factors affecting life and health which the physician may not be able to discern. . . . We are, therefore, justified in sanctioning birth control as a precaution against a danger to the life or health, physical or mental, of the mother or her children, on the advice of a physician, or on the personal convictions expressing the private conscience of the individuals involved.

Rabbi Ben Zion Bokser's statement acknowledges "various circumstances which may produce pressures on a family dangerous to mental health."

Population policy: a viable alternative

The facts presented in the preceding parts of this chapter are indications for a change in the population policy of Israel from a pronatalist to an anti-natalist stance. The basic arguments for such a recommendation are reviewed below:

1. Given the present "open door" migratory policy and given the fact that a pool of potential immigrants does exist, especially in the U.S.S.R., population growth from migration is assured.

2. Therefore, the continued "Jewishness" of the state is assured in the immediate future, even within the context of a significant decrease in the

immigration stream and continued disparity between the Jewish and non-Jewish fertility rates.

3.Each sub-population continues to exhibit different fertility behavior in spite of the socialization processes underway--planned or unplanned. The proportionate distribution of jobs, education, political power, housing and income does not reflect the proportionate distribution of the total population among the sub-populations. This latter point has raised serious social problems which would be compounded if the government were to plan a "selective" anti-natalist policy.

4. A viable population policy must reach beyond a family planning program. However, provision of family planning services will aid in the implementation of a population policy by meeting the needs of individuals who are using contraceptive methods.

In addition to the foregoing arguments, the following conditions in Israel help to suit the country to a broad-based population program:

1. Widespread use of mass media is coupled with high literacy rates among Jews and Arabs.

2. In a nation with compulsory education for all children through elementary school, a unique opportunity exists for family planning education.

3. Israel has an excellent agricultural extension service reaching Jews and Arabs alike, primarily a function of the Ministry of Agriculture, which would be an excellent channel for family planning education.

The broad aspects of programming, mass media, education and quality of life values can function for a population policy only if a system of communication can be established that reaches all strata of the population, including the Arab The leaders of Arab communities must be convinced that it is to the benefit of their people to adopt family planning methods; they may find this a palatable course for improving the quality of life of their people. The example of the family planning program in Egypt can erase doubts that such a program would be

inconsistent with either the religious precepts or the political objectives of a Muslim society. Communication and education among the Israeli government and the designated leaders of the Arab communities would be essential.

The Kupat Holim (Sick Fund) has a ready-made infrastructure supplying health care to every village in Israel and most other communities, rural and urban. The Kupat Holim is oriented toward preventive medicine, social work and health education and could easily provide the best means of diffusion of contraceptive supplies and information. Assistance would be expected from the ministries of agriculture, education, labor, finance, health and communication and from the cultural division of the Histadrut and other health insurance funds. Coordination of efforts could be the responsibility of a subministerial office of family planning, operating in an advisory capacity. A family planning program in Israel, more than the traditional programs of underdeveloped nations, needs person-to-person peer sanction and assurance, which can be accomplished initially by using community leadership channels; local workers can then be recruited.

SUMMARY AND CONCLUSIONS

Superimposed on the delicate political situation of Israel and the problems of a relatively new state is the possible threat created by continued pressures of population growth from the potential influx of mass immigration from the estern world, especially the U.S.S.R., and from persisting high birth rates and low death rates of the non-Jews and riental Jews. The facts discussed in this chapter present a situation which calls for a significant change in the present population policy.

There is no escaping the fact that the basic organism of any state or nation is its people. The life of any state must be sustained by the links among its classes, as well as its functional and territorial groups; especially is this

true of Israel. The State of Israel, created on the basis of the need for an egalitarian Jewish state, is made up of over three million people, the overwhelming majority of whom share a common history, commonly remembered and a common practice which looks for a common future. However, Israel's population is far from homogeneous. The old Orthodox Jew, on one hand, bent over his texts, waits to be "gathered" to the Lord, indifferent to the state which, according to him, must be established by the Messiah; the Halutzim immigrated to Israel to build their utopian communes and have succeeded; the bourgeois ex-citizens of Germany, Austria and Poland came to rebuild their lives; the oriental Jews came from North Africa, Iraq and Yemen, speaking a mixture of Arabic and Aramaic, steeped in a thousand or more years of Islamic traditions, their women illiterate and backward.

When this diversity of immigrants arrived in Israel, the central government had to teach them new professions and new ways of life. Because of the social and economic conditions of the immigrants and because of the external environment that surrounds the state, more of the social and economic decisions were laid upon the shoulders of the government. Hence the major policies adopted were aimed at coping with pressing problems such as integrating the immigrants into the society, strengthening border security and creating a favorable economic atmosphere for healthy economic growth. This the government, through the people's response, was able to achieve within a decade or so.

By 1967, the government faced different kinds of challenges, among which was the prospect of the country's population of 2.7 million growing at the rate of 6.5 percent per year, one of the most rapid growth rates in the world. How much longer will the relationship between the social and economic problems that may be exaggerated by such a high growth rate be ignored?

Currently the state's leadership continues to espouse a pronatalist population policy for two obvious reasons: one is the "open door" policy vis-à-vis immigration of Jews from other parts of the world, and the other is the ultimate objective

of the survival of the Jewish identity of the state in spite of consistently higher birth rates of non-Jews. Despite these two incentives to pronatalism, should not the State of Israel be willing to re-examine its population policy in the light of the increasing burdens of population growth on its limited resources and the widening disparities in standards of living of its eastern and western Jews? It is presumptuous to argue that such disparities will all disappear if the differences in fertility rates are narrowed. But it is equally presumptuous and misleading to ignore completely the potential strength of the relationship between family size and attainable standard of living. To achieve the desired egalitarian Jewish state, is it not time to begin to evaluate systematically the consequences of the current population policy?

REFERENCES

1. William Petersen, "A General Typology of Migration," American Sociological Review, Vol. 23 (1958), pp. 256-66.

2. Characteristics of the different political parties are further described in W. B. Fisher, The Middle East (London: Mentheune and Co., 1952), pp. 292-94.

3. N. Halevi and Ruth Klinov-Malul, The Economic Development of Israel (New York: Frederick A. Praeger, 1968), p. 105.

4. Ibid.

5. The Structure of Israel's Manufacturing Industries: 1952-62 (mimeographed; Jerusalem: Falk Project, 1964) and Interdependence, Resource Use and Structural Changes in Israel (Special Studies No. 2, 1962).

6. Ibid.

7. O. Schmelz, Standard of Education of the Population, June 1954 (Special Series No. 66; Jerusalem: Central Bureau of Statistics, 1958) cited in Table 2-I of Ruth Klinov-Malul, The Profitability of Investment in Education in Israel (Jerusalem: Falk Institute, 1966), p. 8.

8. The military system in Israel augmented the formal educational system, playing an important part in the educational and socializing role. Interested readers may refer to the growing body of literature on studies of the role of the military in Israel's life.

9. Statistical Abstract, 1967 (Jerusalem: Central Bureau of Statistics).

10. Ibid.

11. Yochanan Peres, Projection of the Population in Israel Up to 1985 (Jerusalem: Central Bureau of Statistics, 1968).

12. Ibid., pp. xiii-xiv.

13. H. V. Muhsam, "Differential Mortality in Israel by Socioeconomic Status," Eugenics Quarterly, Vol. 12 (1965), pp. 227-32.

14. Ibid., p. 231.

15. This interrelationship was very adequately argued in A Concept for Research: Zion Overpopulated: The Implications of Demographic Growth in Israel (Research Triangle Park: Research Triangle Institute, 1971).

16. Bill Adler (ed.), Israel: A Reader (Philadelphia: Meier Chilton Book Company, 1968), pp. 185-88.

17. Professor H. V. Muhsam, Professor of Demography and Statistics, Hebrew University; personal communication, December 4, 1969.

18. H. S. Halevi and A. Brzezinski, "The Problem of Abortion in Regard to Country of Origin and Length of Stay in Israel," American Journal of Public Health, Vol. 48 (1958), pp. 615-21; Judah Matras and Chana Averbach, "On Rationalization of Family Formation in Israel," Milbank Memorial Fund Quarterly, Vol. 40 (1962), pp. 453-80 and Roberto Bachi and Judah Matras, "Contraception and Induced Abortions Among Jewish Maternity Cases in Israel," Milbank Memorial Fund Quarterly, Vol. 40 (1962), pp. 207-29.

19. Bachi and Matras.

20. Bachi and Matras in "Family Size Preferences Among Jewish Maternity Cases in Israel," Milbank Memorial Fund Quarterly,Vol. 42 (1964), pp. 38-56, define religious women as those who observe the ritual bath traditions but point out that this is more validly related to observance of religious regulation of sexual relations among European-, Israel- and American-born women than among Afro- and Asian-born women.

21. Matras and Averbach.

22. Max Grunwald, Vienna (Philadelphia: 1936).

23. Shucham Aruch, Codification of Jewish Laws.

24. Immanuel Jakobovitz, Jewish Medical Ethics (New York: Bloch Publishing Company, 1962).

25. Alan F.Guttmacher, "Traditional Judaism and Birth Control," Judaism (Spring, 1967).

PAKISTAN*

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A COUNTRY OVERVIEW

The land mass of Pakistan is divided into two parts, East Pakistan and West Pakistan. The area of the country, excluding the states of Jammu and Kashmir, Junagadh and Manavadar, Gilgit and Baltistan, is approximately 365,529 square miles or 946,720 square kilometers; this area is divided into East Pakistan--55,126 square miles (142,776 square kilometers)--and West Pakistan--310,403 square miles (803,944 square kilometers). The two wings of the country are widely separated from each other. India borders East Pakistan on the east, north and west. Burma has a short common boundary on the southeast, and the Bay of Bengal lies to the south. West Pakistan has its longest border with India, on the east and southeast. On the north and northwest lies Afghanistan. Iran is to the west of West Pakistan and the Arabian Sea is on the south. China shares a common frontier with the Gilgit Ageney. Although Pakistan has no contiguous border with the U.S.S.R., the nearest part of Russia is only about ten to 12 miles from the northern

*Editorial Note: This chapter was prepared prior to the political developments in Pakistan which led to the formation of the independent government of Bangladesh. Herein, the new country will be referred to as East Pakistan.

border of West Pakistan.

East Pakistan lacks the contrasting physical features of West Pakistan. Except for its eastern and southeastern margins, it is a vast plain built by the enormous alluvium deposited by the Ganges, Brahmaputra, Megha and their innumerable tributaries and distributaries. The western section of West Pakistan consists of a mountainous region, the west and southwest extension of the great Himalayan system. The eastern half is formed by the plains of the Indus and its tributaries.

Political history

Pakistan came into existence in August 1947 as a result of the partition of the Indian subcontinent so that the Muslim majority areas constituted Pakistan. In undivided India, Muslims and Hindus were the two dominant groups and experienced major cultural, social, religious and linguistic differences. The Muslims, a large minority group, felt that they would be dominated in these areas basic to their life by the Hindu majority. The movement for a separate homeland was spearheaded by the Father of the Nation, Quadi Azam Mohammad Ali Jinnah, who became the Governor General of Pakistan.

Unfortunately for the young nation, this great leader died in October 1948, and for ten years the country went through an unstable period of parliamentary government which changed frequently and which did not succeed in framing a constitution until 1956. In October 1958, deteriorating economic and political conditions made maintenance of law and order impossible. The president abrogated the constitution and transferred all power to the military, which declared martial law. Martial law remained in effect until 1962 when a new constitution was framed which provided for the establishment of a system of Basic Democracies under which an electoral college of 80,000 representatives called Basic Democrats became the core of the new political

structure. The aim of the new system was to develop local leadership and participation in a presidential form of government.

For about a decade, the country enjoyed political and economic stability under the leadership of President Ayub Khan. By October 1969, however, economic difficulties in the country, along with the upsurge of feelings for constitutional democracy and the corruption charges against Ayub's regime, gave rise to mass alienation from the government. The situation resulted in countrywide civil disturbances, resignation of Ayub and declaration of martial law with simultaneous transfer of power to the armed forces with General Yayha Khan as the new head. The military regime under General Yayha promised to transfer power to civilian representatives and consequently held elections in December 1970.*

SOCIAL AND ECONOMIC SITUATION

The social and economic conditions in Pakistan have been shaped by a long historical process. The culture, which dates back to the ancient civilization of the Indus Basin, reflects the impact of invasion by Persians, Moguls and British.

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*The two parties that emerged successfully from the elections were the National Awami Party, led by Sheikh Mujibur Rahman of East Pakistan and the Pakistan People's Party, led by Ali Bhutto. From December 1970 to March 1971 the two elected leaders and President Yayha held a number of meetings for the purpose of drawing up a constitution. Apparently, their views differed widely, especially in relation to certain details connected with provincial autonomy, particularly that of East Pakistan. Negotiations in hope of reconciliation were futile. From that time on, events moved rapidly, resulting in a major conflict between the two wings of the country in November 1971, in which India intervened militarily on the side of East Pakistan. The result of the war was separation of East Pakistan as a new country under the name of Bangladesh. (See previous editorial note.)

Economic history

Agricultural reform: The western wing of the country owes its civilization to the Indus River; even during this century, the economy is river-based. The country is agrarian and more than 80 percent of the population earns its living through agriculture. The eastern part of the country is centered about the extremity of the Gangetic Delta and has an agricultural economy dependent on natural rainfall and inundation by the rivers. In the western section, agricultural activity has increased due to the development of a system of perennial canals which draw water from the Indus and its tributaries through a system of dams and barrages.

Land reforms introduced by Ex-President Ayub in 1959 encouraged the farmers to develop a sense of ownership, and modern agricultural practices are being gradually accepted. Even though cultivation by bullock is still practiced in both parts of the country, tractors, tube-wells, water pumps, improved seeds, hybrid corn and cotton, use of artificial chemical fertilizers, measures against pests and insects, controlled irrigation and other better agricultural techniques are being adopted to a greater extent. The shift in the attitudes of the farmers towards acceptance of new technology has been accelerated by the government agricultural development program, which arranges for the farmers to have adequate supplies of fertilizers, improved seeds and chemicals. The government also provides positive incentives to the farmers through subsidy of major inputs and through price supports for major crops.

During the Third Five-Year Plan (1965-70), a growth rate of 4.2 percent per year was achieved as compared with 3.4 percent in the second plan (1960-65) and 1.3 percent obtained in the 1950s. By 1970 the country was almost self-sufficient in food grain supplies. The large increase in the output of crops during 1965-70 was due principally to (1) high yielding varieties of wheat,

rice and maize, (2) increased supply of irrigation water, (3) increased use of chemical fertilizers and (4) measures for protection of crops against pests and diseases. It is hoped that in the fourth plan (1970-75), the country will be able to export some food grains. Efforts will also be made to provide nutritionally superior diets for the people by increasing output of oil-seeds, dairy and other livestock products. The greatest handicaps at present preventing achievement of the objectives of rapid increase in agricultural production are waterlogging and salinity in West Pakistan and floods in East Pakistan. Measures are currently underway to control both these problems.

Industrialization: When Pakistan was carved out as a sovereign state from the Indo-Pakistan subcontinent in 1947, the country had very few industries. The areas which became Pakistan were designed to provide raw materials to factories located outside the boundary and abroad. As such, most of the foreign trade of Pakistan centered around fiber, jute, cotton and other products such as tea, skins, oil-seeds and fruits. However, soon after independence, great emphasis was laid on the industrialization of the country.

Pakistan's initial concentration on the aforementioned products has shifted to an emphasis on sugar, vegetable ghee, cement and more sophisticated chemical and engineering industries. The country has substantial capacities in textiles, vegetable oil, sugar, cement, paper, fertilizers and chemicals, and a beginning has been made in engineering industries. Not only do industries provide a large proportion of available consumer goods, but they also contribute a substantial portion of the earnings from export. Instead of exporting only raw fiber, the country now exports cotton textiles and jute manufactured articles to other countries.

In the early stages of development, industries were localized in a few sizable industrial towns. But attempts are now being made to spread the industry out over larger areas in order to effect a balanced development of all parts of the country. The government has encouraged industries not only through its taxation, import and export policies but also by providing finances and opportunities for small investors. Pakistan Industrial Development Corporation, with the majority of shares from the government and the control of its administration in the hands of the government, develops those industries where private initiative is lacking. After successfully running such industries, the corporation sells them to private investors. Liberal banking and fiscal policies--particularly protective tariffs, tax holidays and export bonus schemes--have been instituted to encourage the growth of industries, particularly export-oriented industries.

The average growth rate of more than 14 percent achieved in large-scale manufacturing over the past two decades is one of the highest in the developing world. With the harnessing of atomic energy from nuclear plants, setting up of machine tool factories for preparation of industrial parts, establishing of a large complex of steel and engineering industries and an oil refinery, the dependence on imports for industrial production will be greatly reduced. The manufacturing industries in Pakistan, within a short period, will not only meet the needs of the population, but will also be able to export manufactured goods in large quantities. Besides aiding large-scale industries, the government has set up a Small-Scale Industries Corporation which aims at helping small-scale and cottage industries and has established several industrial estates all over the country to encourage such undertakings.

Urbanization: As a consequence of industrial growth, urbanization in Pakistan is happening at a rapid pace. According to the 1961 Census, 13.1 percent of the population of Pakistan lived in urban areas; 22.5 percent of the

West Pakistan population was urban, while 5.2 percent of the East Pakistan population lived in urban areas.[1] Whereas between 1951 and 1961 the rural population of Pakistan grew by 20.0 percent, the decennial variation of urban population was 57.4 percent. The variation was particularly marked in West Pakistan where the size of the urban population grew by 61.1 percent. Not only has the population in the urban areas increased, but also a number of localities which were classified as rural in 1951 became urban in 1961. In the 1951 Census, 282 localities were classified as urban; in 1961, this number was 393.

Changes in Gross National Product (GNP)

The country's Gross National Product increased by 121 percent in real terms from 1949-50 to 1969-70, giving an annual growth rate of 4.1 percent. The increase was less marked in the first decade, when a 28 percent increase was recorded, than in the second decade, which witnessed a 72 percent expansion. In 1949-50, the GNP at current prices was 24,466 million rupees, giving a per capita income of 253 rupees.* The GNP rose to 31,439 million rupees and the per capita income to 318 rupees for the period 1959 to 1968. In 1969-70 the GNP was 54,140 million rupees and the per capita income 551 rupees.[2]

The structure of production has changed considerably since 1950. In relation to the 4.1 percent growth rate in GNP, value added in agriculture grew at 2.6 percent, in manufacturing at 8.0 percent, in construction at 13.4 percent and in other sectors at 4.7 percent. Concentration of production in agriculture was reduced as the country industrialized and urbanized. Agriculture continues to be the dominant sector, but its share declined from 60

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*1 rupee = U.S. 21.2¢; therefore, the 1969-70 per capita income of 551 rupees would amount to about $116.81.

to 45 percent, while the share of manufacturing doubled from six to 12 percent in the period from 1950 to 1967.[3]

In the fourth plan the target specified is an industrial growth rate of 6.5 percent in GNP, which would permit the average per capita income to increase from 550 rupees in 1970 to 660 rupees in 1974-75. The long-term Prospective Plan aims to triple the GNP between 1965 and 1985. Along with the improvement in GNP, a more equitable distribution of per capita income and provision of full employment to the entire labor force are proposed.

Employment

Like all other developing countries, Pakistan is faced with the serious problem of surplus labor. According to the 1951 Census, only 30.7 percent of the population formed the civilian labor force, 75.5 percent of which was engaged in agriculture which was not a full-time employment.

The 1961 Census showed that the civilian labor force rose to 33.4 percent of the population and the agricultural labor force formed 74.3 percent of the total civilian labor force.[4] Women were almost excluded from the labor force, particularly in rural areas, which accounts for most of the low labor participation. According to the 1961 Census, 54.6 percent of all males were in the labor force, whereas only 3.8 percent of all females were included. At that time 12.5 percent of the labor force were women. Among females who did work, 85.3 percent were engaged in agricultural occupations and 14.7 percent in non-agricultural ones. In urban areas, 1.3 percent of the women were members of the labor force. Of the total labor force in Pakistan, estimated at 37.25 million in 1956, 20 percent were unemployed or underemployed. During the Second Five-Year Plan, 3.6 million additional persons were absorbed. In the third plan 5.5 million new jobs were to be created, compared to a population increase of 4.2 million. By 1975, full employment is expected to be provided

in the country. The Prospective Plan (1965-85) makes a conservative estimate that in Pakistan, due to growth of population and changes in the age structure, the size of the labor force will increase to over 62 million by 1985. However, only about four percent of available manpower will be unutilized by that time.

During the Prospective Plan, structural changes in labor participation are also anticipated. In 1965, 65 percent of the employment was in agriculture, 11 percent in manufacturing and 24 percent in other sectors. In 1985, the planned proportions are 49 percent in agriculture, 14 percent in manufacturing and 37 percent in other sectors, thus substantially reducing the heavy dependence on agriculture.

Role of Women

The socio-religious factors operating in Pakistan, where the population is predominantly Muslim, have resulted in the seclusion of women. Purdah in some form is observed by an overwhelming majority of women. In rural areas, women do help the men in their agricultural activities to a certain extent, but segregation of the sexes is quite complete. The seclusion of women has resulted in lack of participation by women in the labor force as already discussed. Therefore, women are confined to activities within the home, and their role in decision making is limited; these conditions act as barriers to their emancipation and, in effect, eliminate 50 percent of the population from active participation in provincial activities.

However, a slow transition is occurring. Enrollment of women in educational institutions is increasing and employment for women in urban areas is growing. Women have not only cast their votes in elections, but have also contested seats in the election against general constituencies. The consciousness of the role of women has been enhanced by national

voluntary organizations, particularly the All Pakistan Women Association, Association of University Women, Red Cross, Girl Guides and several other social and cultural organizations at local and national levels.

Education

During the two decades since the creation of the country, significant improvement has been made in providing educational opportunities to the population. In 1961, the literacy level of the total population was 15.9 percent, 23.4 percent among males and 7.6 percent among females. The improvements already achieved are reflected in the number of schools and the enrollment. Table 1 gives figures for 1949 to 1966. Numbers of male and female students and teachers may also be compared. This growth in numbers, as well as improvement in quality, is reflected in the statistics for education at all levels. Figures given here for the universities do not include about half a million undergraduates studying in various types of colleges.

However, increases in population have nullified improvements in literacy. The goal of universal literacy is receding, although by the end of the Prospective Plan (1984-85) universal elementary education should be available to all boys and girls. In 1965, the school-age population was estimated to be around 30 million, of whom only eight million were enrolled. The age groups 6-11 and 11-14 show a potential increase of ten million and six million, respectively, during 1965-85. Universal eight-year education by 1985, therefore, means that additional facilities for 38 million children have to be provided during the 20-year period, that is, a fourfold increase above the 1965 level.

Economic takeoff

Pakistan has taken a course of planned economic development. The concept of planning was, in fact, introduced in the country with the Colombo Plan in

Table 1
Growth of Education, 1949-66

	1949-50	1959-60	1965-66
Primary Schools	36,400	44,484	62,049
Total Enrollment	2,989,760	4,728,277	6,999,706
Male	2,336,298	3,595,631	5,120,642
Female	653,462	1,132,646	1,879,064
Secondary Schools	6,155	6,096	8,436
Total Enrollment	1,089,865	1,442,868	2,430,580
Male	978,607	1,289,129	1,879,578
Female	111,258	233,739	551,002
Universities	3	6	10
Total Enrollment	3,027	7,858	27,539
Male	2,930	6,779	25,857
Female	124	1,079	3,682
Teachers			
Primary Total	86,762	123,310	180,076
Male	82,395	113,312	158,692
Female	4,367	9,998	21,384
Secondary Total	43,210	54,926	91,531
Male	40,673	47,821	75,685
Female	2,537	7,105	15,846

1950, and comprehensive planning began with the formulation of the First Five-Year Plan (1955-60). The first plan was rather an experiment, the main purpose in that and the second plan being to refine the concept of planning and to strengthen the infrastructure of the economy by initiating institutional reforms which would facilitate uninterrupted economic expansion. The second plan, however, achieved dramatic success, and all the key economic indicators showed unmistakably rapid progress. Based on the experiences gained in the first two plans, a long-range Prospective Plan (1965-85) was formulated which set definite objectives as follows: (1) tripling of the Gross National Product, (2) providing full employment to the labor force, (3) attaining universal literacy and (4) eliminating dependence on foreign assistance. If the plan objectives are attained by 1985, Pakistan will reach a state of self-sustained economic growth, crossing the stage of takeoff.

The economy has become progressively diversified as the country has become progressively urbanized. The increase in industrialization and trade is reflected in the growth of financial institutions. The process of rapid growth will bring about considerable changes in the sectorial composition of the GNP. Sectors such as mining, manufacturing, construction and transport which offer greater possibilities of quickly increasing output are planned as the leading sectors.

Along with improvement in productive capacity, provision has been made for a decline in the rate of population growth; it is anticipated that by 1985, the fertility rate will be reduced by one-half, thus effecting a reduction in the crude birth rate from its level of about 50 per thousand in 1965 to 25 births per thousand population in 1985. To provide a more equitable distribution of wealth, emphasis will be placed more and more upon human resource development, social welfare plans, improvement in health

conditions, better housing and improved transport facilities.

If the political conditions of Pakistan do not act as a constraint on the economy, the available indicators show the arrival at the stage of takeoff helped by a comprehensive and realistic development strategy.

DEMOGRAPHIC SITUATION

Like most developing countries, Pakistan does not have a complete or reliable vital registration and data collection system. Since 1947, two censuses have been conducted, one in 1951 and one in 1961. Although the censuses suffer from errors of under-reporting, they are the only sources which can provide basic population characteristics. To overcome the problem of lack of information on vital events, particularly between censuses and to provide some information in mortality trends, fertility trends and rates of natural increase, ad hoc sample surveys were conducted from time to time. One such survey, the Population Growth Estimation (PGE) Project, was set up in 1961 as a national sample survey which provided provincial and national estimates of vital events. This was a joint activity of the Central Statistical Office and the Pakistan Institute of Development Economics. Efforts are being made to develop a vital registration system, but to date not much progress has been made.

Population Trends

The basic facts of the growth of population in Pakistan can be seen in Table 2. The population of the country has more than doubled during the last six decades. The net increase of population during the first five decades--that is, 1901 to 1951, was 30.2 million; during the decade 1951 to 1961, the increase was 18 million. While population increased by 106 percent

Table 2

Population and Percentage Increase, 1901-61

	Pakistan		East Pakistan		West Pakistan	
Year	Population (thousands)	Increase (percent)	Population (thousands)	Increase (percent)	Population (thousands)	Increase (percent)
1901	45,504		28,928		16,576	
1911	50,937	8.4	31,555	9.1	19,382	7.1
1921	54,363	6.7	33,254	5.3	21,109	8.9
1931	59,146	8.8	35,604	7.1	23,542	11.5
1941	70,279	18.8	41,997	18.0	28,282	20.1
1951	75,672	7.7	41,932	0.2	33,740	19.3
1961	93,720	23.9	50,840	21.2	42,880	27.1

during the period 1901 to 1961, 40 percent of this increase occurred during the last decade. The total increase in East Pakistan for these years was 76 percent, whereas in West Pakistan the corresponding increase was 130 percent.

The rate of population growth has been considerably higher in West Pakistan than in East Pakistan. The annual rate of growth for East Pakistan was 0.75 percent during the period 1901 to 1951; for West Pakistan the corresponding growth rate was 1.27 percent per year. The high growth rate during 1951 to 1961 may be a result of the combination of high fertility rates with a correspondingly sharp decline in mortality rates.

The high growth rate in West Pakistan has been attributed to greater land potential and utilization and steadily growing irrigation facilities, resulting in colonization and agricultural development of large areas and important industrial development; all of these factors contributed to a rapid decline in mortality rates. In East Pakistan, the lower total growth rate was due to frequent floods, epidemic diseases, malnutrition and to the Great Famine of 1943, which alone took about 1.5 to 2.5 million lives. In the current decade, however, indications are that the growth rates in both East and West Pakistan are approximately equal.

Population composition

Density of population: The 1961 census reported a density of 256 persons per square mile or 99 persons per square kilometer in Pakistan as a whole. The density in East Pakistan was one of the highest in the world, 922 persons per square mile or 356 persons per square kilometer. The density in West Pakistan was 138 persons per square mile or 53 persons per square kilometer. East Pakistan, with only 15 percent of the total land area of Pakistan, has over 54 percent of the total population. The density in East Pakistan is more than six times that of West Pakistan, making East Pakistan the third

most densely populated area in the world. The area of all Pakistan comprises 3.5 percent of the total land area of Asia, contains 5.5 percent of the population of the continent and has a density of 99 persons per square kilometer, compared to the average density of 63 persons per square kilometer in Asia.

Age composition trends:* Table 3 indicates the percentage distribution of population by age groups as recorded in the 1951 and 1961 censuses for Pakistan's provinces. A substantial increase in the proportion of children up to four years of age occurred in the last decade, 1951-61. However, more spectacular is the increase in the proportion of children between the ages of five and nine during this ten-year period. Most demographers and census workers analyzing the data attribute the heaping of population in the five-to-nine age group as an enumerator bias to understate the ages of persons in the ten-to-14 age group.

Dependency ratio: There were 41.7 million children in Pakistan under 15 years of age, 44.5 percent of the total population, in 1961. The proportion of persons who were 65 years and older constituted four percent of the total population. Pakistan has one of the highest dependency ratios in the world (94) when compared with many developed and even with some developing nations. In fact, when children, old people and women are included in the dependent groups, 25 percent of the population is supporting the remaining 75 percent. In East Pakistan, 46.1 percent of the population were children under 15 and 4.0 percent were 65 and older, giving a dependency ratio of 98. For West

*Age reporting is often incorrect in developing countries, and Pakistan is no exception. An individual may not know his correct age; he either guesses his age or chooses a preferable age. Enumerators are often forced to estimate the ages of people. However, even though taught to probe for dates of birth and to assess age, many enumerators are unable to discover even approximate ages, particularly of women, due to the purdah system and to the low level of literacy.

Table 3

Percent Distribution of Population by Age and Sex, 1951 and 1961

Age Group	1951			1961		
	Total	Males	Females	Total	Males	Females
	EAST PAKISTAN					
0-4	14.6	13.9	15.4	18.2	17.4	19.1
5-9	14.9	14.5	15.3	18.7	18.5	19.0
10-14	12.6	13.5	11.7	9.1	9.9	8.3
15-19	10.0	9.4	10.6	7.7	7.3	8.1
20-24	8.3	7.8	8.8	7.5	6.9	8.1
25-29	8.0	7.7	8.4	7.9	7.6	8.2
30-34	6.8	6.9	6.8	6.4	6.4	6.3
35-39	5.8	6.0	5.5	5.5	5.9	5.1
40-44	5.0	5.2	4.7	4.7	4.8	4.5
45-49	3.8	4.3	3.2	3.6	3.9	3.3
50-54	3.7	3.9	3.5	3.4	3.6	3.3
55-59	2.1	2.3	2.0	2.1	2.3	1.8
60+	4.4	4.7	4.2	5.2	5.5	4.6
	WEST PAKISTAN					
0-4	13.7	13.0	14.6	16.4	15.6	17.3
5-9	13.1	12.9	13.4	16.4	16.3	16.5
10-14	16.4	16.1	16.5	9.7	9.9	9.4
15-19	12.1	11.5	12.7	9.0	9.1	8.9
20-24	8.1	8.1	8.1	7.8	7.7	7.9
25-29	6.5	6.9	6.0	7.7	7.5	8.0
30-34	5.7	6.0	5.3	6.4	6.3	6.6
35-39	4.6	4.9	4.2	5.3	5.3	5.2
40-44	4.6	4.8	4.3	4.8	4.9	4.8
45-49	3.6	3.8	3.4	3.8	4.0	3.7
50-54	3.7	3.9	3.5	3.7	3.9	3.5
55-59	2.3	2.2	2.3	2.0	2.1	2.0
60+	5.7	5.7	5.7	6.9	7.4	6.4

Pakistan, the figures are 42.4 percent and 4.9 percent, respectively, yielding a slightly lower dependency ratio of 90.

Sex composition trends: Table 4 shows the age-sex distribution of the population in terms of the sex ratio (number of males per thousand females) for the 1951 and 1961 censuses. A great variation is observed in the age specific sex ratios between the 1951 and 1961 censuses. The deficit of females is quite pronounced in the 10-14 age group for both East and West Pakistan, in the 35 years and above age group in West Pakistan and in the age group 40 years and above in East Pakistan. These wide fluctuations in the age specific sex ratios may be caused by the misreporting of age data in the censuses. Although the 1961 sex ratio is closer to unity than the 1951 figures, the sex differentials still remain quite high in both the censuses. The overall high ratio of males to females in Pakistan and particularly in West Pakistan is attributed to higher female mortality rates and to under-enumeration of females.

Religious composition: Muslims are the largest religious group in the country. According to the 1961 census, 82.5 million Muslims comprised 88 percent of the total population. The proportion of Muslims to the total population was 80 percent in East Pakistan and 97 percent in West Pakistan. The largest minority groups are Hindus and Christians, in that order. Hindus comprise 18 percent of the population of East Pakistan but only two percent of the population of West Pakistan. Christians were 1.4 percent of the total population of the country.

Urban-rural distribution: According to the 1961 census, 13 percent of the population of all Pakistan lived in urban areas, five percent in East

Table 4

Age Specific Sex Ratios, 1951 and 1961
(Males per thousand females)

Age Group	Pakistan		East Pakistan		West Pakistan	
	1951	1961	1951	1961	1951	1961
All ages	1,127	1,111	1,097	1,076	1,168	1,158
0- 4	1,014	1,005	990	978	1,045	1,047
5- 9	1,071	1,084	1,037	1,045	1,120	1,146
10-14	1,204	1,256	1,263	1,282	1,144	1,226
15-19	1,016	1,066	976	969	1,061	1,185
20-24	1,049	1,007	972	918	1,166	1,129
25-29	1,131	1,039	1,017	1,002	1,351	1,090
30-34	1,193	1,101	1,114	1,096	1,538	1,107
35-39	1,254	1,213	1,205	1,243	1,348	1,175
40-44	1,248	1,156	1,209	1,126	1,323	1,195
45-49	1,380	1,262	1,450	1,267	1,303	1,255
50-54	1,253	1,233	1,212	1,183	1,319	1,296
55-59	1,191	1,338	1,286	1,405	1,085	1,257
60+	1,197	1,281	1,226	1,229	1,170	1,334

Pakistan and 22 percent in West Pakistan.* Table 5 indicates that East Pakistan, which is more densely populated, is less urbanized than West Pakistan. In addition, the rate of urbanization in East Pakistan during the decade 1951 to 1961 was slower than it was in West Pakistan, perhaps because West Pakistan is industrializing more rapidly than East Pakistan and the communication and transportation facilities in East Pakistan are poor.

The increase of urban population in 1961 was accompanied by an increase in the number of urban places (cities and towns). In 1951 there were 276 urban places, whereas in 1961 this number had increased to 383. The absolute change in population from rural to urban was five times higher in West Pakistan than in East Pakistan. The growth of urban population is due to such factors as the addition of new areas classified as urban in 1961, natural increase of population, net immigration from rural to urban areas and annexation of rural areas by expanding towns and cities.

Vital Rates

During the British regime the census was developed into an efficient system in terms of quality and coverage. However, no real effort was made to develop the existing vital registration system into a reliable source of demographic data. At present, the quality of vital statistics is still poor and accuracy and coverage remain incomplete.[5] The official rates as shown by the United Nations for the registration areas of Pakistan are as follows:[6]

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*Urban areas are defined for the 1951 and 1961 censuses as including all cities and towns having a population of 5,000 or more plus all incorporated municipalities and towns managed by notified area committees, even if they had less than 5,000 population. In the 1961 census, provincial directors were given the discretion to treat a continued collection of houses inhabited by less than 5,000 persons as urban provided that such an area exhibited pronounced urban characteristics, especially non-agricultural occupations among its population.

Table 5

Urban-Rural Population Distribution, 1951 and 1961*

Area	1951 Number (in thousands) Total	Urban	Rural	1951 Percent Urban	Rural	1961 Number (in thousands) Total	Urban	Rural	1961 Percent Urban	Rural
Pakistan	75,842	7,863	67,979	10.4	89.6	93,832	12,324	81,508	13.1	86.9
East Pakistan	42,062	1,844	40,218	4.4	95.6	50,854	2,648	48,205	5.2	94.8
West Pakistan	33,780	6,019	27,761	17.8	82.2	42,978	9,676	33,302	22.5	77.5

*Adjusted to include 1.1 million non-Pakistanis in the country

Source: 1961 Census, Vol. I (Pakistan: Government of Pakistan).

Year	Crude Birth Rate	Crude Death Rate
1945-49	20.6	13.2
1950-54	20.1	12.1

These rates are much lower than the growth of the population, as previously discussed, would indicate--evidence that under-reporting is very great, perhaps too great to permit the use of registration data.

The results of collecting vital rates in the last two censuses taken in the country are not encouraging. The accuracy of birth and death data in the 1951 census was so questionable that the data were not published. In the 1960 Housing Census, the crude birth rates for the country as a whole and for East and West Pakistan were recorded as 23, 28 and 24 births per thousand population, respectively, while the crude death rates were recorded as nine, 11 and seven deaths per thousand population in Pakistan, East Pakistan and West Pakistan, respectively.[7] The vital rates of the Housing Census are somewhat higher than the rates based on the official registration data but still much lower than expected.

The Population Growth Estimation Project (PGE) derived three different estimates of vital events in sample areas for the period 1962-65 for the country as a whole and for East and West Pakistan separately.*

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*The three different estimates were derived by adopting two types of procedures for collecting data. In the first method, known as Longitudinal Registration (LR), the vital events were recorded as they occurred by a special PGE registrar residing in the sample area. In the second approach, called Cross-Sectional Survey (CS), a quarterly survey was conducted in PGE sample areas and vital events which had occurred during the past year were recorded. The third estimate was derived from the Chandra-Deming (CD) technique in which the events of LR and CS were matched one by one, and nonmatched events were investigated. Ultimately the Chandra-Deming formula was used to calculate the birth and death rates.[8]

In January 1968, the Central Statistical Office began a continuous Population Growth Survey (PGS) with the object of collecting vital events in the country as a whole and in both wings separately.*

Trends in crude birth rates and crude death rates: In Table 6 the crude birth rates and crude death rates of PGE are presented for the years 1962-65 and those of the PGS for the year 1968. The rates of PGE are based on registration (LR), survey (CS) and the Chandra-Deming (CD) technique, while the PGS rates are based on the survey method only.

The table shows that the CS rates are considerably lower than the LR rates, which indicates that the registration method was superior to the household survey method in PGE sample areas. In the LR system if births and deaths omitted by registrars are offset by under-enumeration of population, then LR rates may be considered closer to the true rates. The quality of checks on births and deaths indicates that the magnitude of under-enumeration in CS was greater than that of over-enumeration when compared to LR figures and, therefore, the CS rates fall short of LR rates.[9]

On the other hand, with the Chandra-Deming technique the population figures are somewhat underestimated, and the number of births and deaths is overestimated due to matching problems. Hence, it is suspected that the CD technique may somewhat overstate the birth and death rates.

The table further shows that the LR and CS rates in East Pakistan declined considerably in the year 1964. This decline was reflected in the population of both East and West Pakistan in 1965 and might be attributed to field problems arising from the communal riots in East Pakistan in early 1964, and from the September 1965 Indo-Pakistan war which resulted in a sharp drop

*In PGS, data were collected only through survey (CS) and not by registration as was done in PGE.

Table 6

Estimates of Crude Birth and Death Rates, 1962-65 and 1968

Method of Estimates and Area	PGE Estimates 1962	1963	1964	1965	1962-1965	PGS Estimates 1968
Crude Birth Rates						
Chandra-Deming (CD)						
Pakistan	55	54	52	49	52	-
East Pakistan	57	55	50	49	53	-
West Pakistan	52	53	55	49	52	-
Registration (LR)						
Pakistan	46	45	42	40	43	-
East Pakistan	47	48	43	40	44	-
West Pakistan	45	42	41	39	42	-
Survey (CS)						
Pakistan	40	44	43	37	41	37
East Pakistan	42	48	43	38	43	37
West Pakistan	37	38	42	37	38	36
Crude Death Rates						
Chandra-Deming (CD)						
Pakistan	20	19	20	18	19	-
East Pakistan	20	19	21	20	20	-
West Pakistan	19	19	20	16	18	-
Registration (LR)						
Pakistan	17	16	16	14	16	-
East Pakistan	17	16	16	16	16	-
West Pakistan	17	16	15	12	15	-
Survey (CS)						
Pakistan	12	13	15	10	13	14
East Pakistan	13	15	17	10	14	16
West Pakistan	12	11	13	9	11	12

Sources: PGE data are from William Seltzer, Benchmark Demographic Data for Pakistan: A Review of Summary Estimates Derived from PGE (Experiment Research Report No. 66; Karachi: Institute of Development Economics) and PGS data are from a paper submitted to the working group on PGS held at the Central Statistical Office, August 1969.

in effective supervisory control of field operations during the last four months of 1965. The change might also be due to disinterest among field staff who knew that the project was to be terminated in December 1965. To mitigate the effect of these problems, the four-year average rates have been used.

PGE rates, compared with official registration or census enumeration rates, are more or less twice as much as those obtained from the other two sources. The crude birth rate is higher in East than in West Pakistan, while the differences in the crude death rate in both parts of the country are nominal. The PGS has shown lower rates than the PGE survey figures indicating that some under-reporting occurred in the former survey.

The planning commission for the Fourth Five-Year Plan used a crude birth rate of 45 births per thousand population for mid-1970, whereas the Family Planning Division arrived at a crude birth rate of 42 births per thousand population in mid-1970.

Rate of natural increase: The average rates of natural increase for all Pakistan, East Pakistan and West Pakistan, based on the PGE Chandra-Deming estimates of crude birth and death rates for the four-year period 1962-65 were 3.3, 3.3 and 3.4 percent, respectively. The comparable average rates of natural increase based on LR registration estimates were 2.7 for Pakistan, 2.8 for East Pakistan and 2.7 for West Pakistan. The rates for the corresponding period based on CS estimates were 2.8, 2.9 and 2.7 percent for Pakistan, East Pakistan and West Pakistan, respectively.

The planning commission for the Fourth Five-Year Plan in mid-1970 accepted a rate of natural increase of 2.7 percent per year, while the Family Planning Division for the corresponding period worked out the growth rate to be 2.5 percent per year.

Marriage

Table 7 shows the percentage distribution of population by marital status and sex for Pakistan and its provinces. The proportion of ever-married persons (married, widowed or divorced) to the total population of ten years of age and over was 74 percent in 1961. More males were single than females. In East Pakistan, 92 percent of the females were married by age 15 to 19 years, whereas in West Pakistan only 53 percent were married by that age. In East Pakistan 99 percent of the women were married by age 20 to 24, while in West Pakistan 97 percent were married by 20 to 24 years of age. According to the 1964 PGE Project, the mean age at first marriage for females in East Pakistan was 14.9 years compared to a mean age of 19.1 years in West Pakistan. Eighty-three percent of the males in East Pakistan and 72 percent of males in West Pakistan in the age group 25-29 years were married.

Pakistan is one of the low divorce rate countries of the world. Pakistani society is not tolerant of divorce. In fact, couples tend to live together, even though they may not be happy with each other, rather than seeking a divorce.

Other measures of fertility

In Table 8, PGE age specific fertility rates (ASFR), general fertility rates (GFR), total fertility rates (TFR) and gross reproduction rates (GRR) based on Chandra-Deming (CD) and registration (LR) estimates are presented for the years 1963-65 for Pakistan, East Pakistan and West Pakistan.

If the LR and CD estimates are assumed to give the true age specific fertility rates on the low and high sides, respectively, then the age specific fertility rate for Pakistan rises from 179-215 births per thousand women aged 15-19 to a peak of 304-363 for women aged 25-29 years; thereafter, both sets of rates decline rapidly. The general fertility rate varies from 202 to 247

Table 7

Percent Distribution of Population Ten Years of Age and Over by Sex and Marital Status, 1961

Sex and Area	Single	Married	Widowed	Divorced
Pakistan				
Males	35.34	59.78	4.57	0.30
Females	15.46	69.11	14.81	0.62
Total	26.14	64.05	9.37	0.45
East Pakistan				
Males	33.49	63.00	3.20	0.31
Females	10.48	70.65	18.06	0.81
Total	22.62	66.61	10.22	0.55
West Pakistan				
Males	37.51	56.03	6.17	0.29
Females	21.92	66.80	10.91	0.37
Total	30.39	60.95	8.34	0.32

Source: 1961 Census, Vol. I (Pakistan: Government of Pakistan).

Table 8

Selected PGE Fertility Rates, 1963-65

Age Group and Rates	Pakistan	East Pakistan	West Pakistan
		Chandra-Deming (CD)	
Age Specific Fertility Rates			
15-19	215	276	130
20-24	335	359	303
25-29	363	356	373
30-34	300	260	353
35-39	194	150	250
40-44	81	56	114
45-49	41	22	67
General Fertility Rate (GFR)	247	245	249
Total Fertility Rate (TFR)	7.65	7.40	7.95
Gross Reproduction Rate (GRR)	3.71	3.59	3.86
		Registration (LR)	
Age Specific Fertility Rates			
15-19	179	230	110
20-24	270	303	226
25-29	304	313	291
30-34	248	221	283
35-39	155	129	187
40-44	61	48	79
45-49	26	13	42
General Fertility Rate (GFR)	202	209	192
Total Fertility Rate (TFR)	6.22	6.29	6.09
Gross Reproduction Rate (GRR)	3.02	3.05	2.96

Source: William Seltzer, Benchmark Demographic Data for Pakistan: A Review of Summary Estimates Derived from PGE (Experiment Report No. 66; Karachi: Institute of Development Economics).

births per thousand women aged 15-49 years of age. The total fertility rate (6.22 to 7.65 births per woman) and gross reproduction rate (3.02 to 3.71 female births per woman) also vary, with the CD rates being somewhat higher.

Table 8 indicates that in East Pakistan, by the CD estimate, the age specific fertility rate increases swiftly from age group 15-19, reaches its peak in the 20-24 age group and then levels off in the age group 25-29, followed by a sharp decline in the subsequent age groups. In West Pakistan the age specific fertility rate increases gradually from age group 15-19, reaches its peak in the age group 25-29 and declines gradually up to 30-34 years of age after which there is a steep fall. It appears that East Pakistani women begin bearing children earlier and stop bearing them sooner than women in West Pakistan.

The summary fertility measures such as general fertility rate, total fertility rate and gross reproduction rate based on CD estimates are higher in West Pakistan than East Pakistan. The general fertility rate for East and West Pakistan is 245 and 249 births per thousand women 15-49 years of age, respectively. The total fertility rate is 7.4 and 8.0 per woman for East and West Pakistan, respectively, and the gross reproduction rate is 3.6 and 3.9 per woman for East and West Pakistan, respectively. The summary fertility measures based on LR estimates are higher for East than West Pakistan.

Population Projections*

During the past several years, a number of individuals, agencies and organizations have made alternative sets of projections for Pakistan using different assumptions, as shown in Table 9. The projections do not differ

*These projections are given to demonstrate the continuing great magnitude of the population problem even in the presence of wars, epidemics and famine.

Table 9

Population Projections, 1970 and 1980

Source of Projection		Assumptions	Population (millions) 1970	1980
UN (1964)	I	Constant fertility (continued trends variant)	121	162
	II	High variant from 1970 onward	121	159
	III	Declining fertility from 1960 onward (low variant)	119	146
	IV	Medium variant from 1960 onward	121	154
US Census Bureau (1965)	A	Constant fertility, constant mortality	136	191
	B	Declining fertility, constant mortality	133	173
	C	Constant fertility, declining mortality	137	198
	D	Declining fertility, declining mortality	134	179
CSO (1966)	I	Constant fertility, normal mortality decline	118	160
	II	Fertility declining one percent from 1965, normal mortality decline	118	150
	III	Fertility declining one percent from 1965 and two percent from 1970, normal mortality decline	117	148
	IV	Constant fertility, rapid mortality decline	119	164
	V	Fertility declining one percent from 1965, rapid mortality decline	118	156
	VI	Fertility declining one percent from 1965 and two percent from 1970, rapid mortality decline	118	152
PIDE* (1968)	I	Constant fertility	135	200
	II	Constant fertility until 1970, then 30 percent decline by 1980-85	135	188
	III	Constant fertility until 1965, then 50 percent linear decline to 1980-85	132	172
Planning Commission (1968)	I	Constant fertility until 1970, then 26 percent linear decline to 1985 with declining mortality	136	183

*The mortality is assumed to decline exponentially from 1960-65 to 1980-85 in all three assumptions.

Sources: The UN projections are from Provisional Report on World Population Prospects, as Assessed in 1963, 1964 (New York: United Nations, 1964). The US Census Bureau data come from James W. Bracket and Donald S. Akers, Projection of the Population of Pakistan by Age and Sex, 1965-1986 (US Bureau of the Census, 1965). The 1966 CSO projections are taken from Alternate Population Projections of Pakistan and Provinces by Age and Sex from Mid-1960 to Mid-1985 (Pakistan: Government of Pakistan, Central Statistical Office, 1966). PIDE data are from Lee L. Bean, Masihur Rahman Khan and A. Razzaque Rukanuddin, Population Projections for Pakistan 1960-2000 (Monograph No. 17; Karachi: Pakistan Institute of Development Economics, 1968). Finally, the planning commission estimate comes from Population Projections for the Fourth Plan, 1970-75 (Mimeographed; Pakistan: Government of Pakistan Planning Commission, 1968).

in terms of methodology. All of them used the age-sex component method of projection. In the Central Statistical Office (CSO) projection, the adjustments in base population were minimal; additions were made only for the 0-4 age group of the population. The planning commission, Bose and the U.S. Bureau of the Census made larger additions to the base population.[10] But in the Pakistan Institute of Development Economics (PIDE) projections comprehensive adjustments for over- and under-reporting and misreporting were incorporated. In some projections age specific fertility rates were applied by using the recommended weights of the United Nations.[11] The Central Statistical Office used preliminary age specific fertility rates for PGE for the year 1963 while the PIDE projections used the average of 1963-65 age specific fertility rates. Other projections for East and West Pakistan used separate mortality patterns observed in other developing countries which were highly conservative, while the PIDE projections used differential mortality patterns prevalent in East and West Pakistan for males and females separately for the years 1963-65.

It is observed from the table that the United Nations and CSO projections have given conservative estimates of population growth. The U.S. Census Bureau assumptions fall in between the PIDE II and III assumptions. Taking into account the limitations mentioned above about various projections, the PIDE projection will be used for further discussion.

Under assumption I, the population of Pakistan would double by 1979 and would double again by 1996. Thus the population of the country would grow fourfold within a 36-year period. According to assumption II, the population of the country would double by 1981 and then double again by the year 2003. A fourfold increase would be achieved shortly after the turn of the century. Under assumption III, the time required for the population to double would be 25 years, as compared to 19 years in assumption I and 21 years in assumption II.

One result of such growth will be a further increase in the density of the population. East Pakistan, which has already one of the highest densities in the world, given no transfer of population and a high rate of growth, would face acute space problems. Even under optimistic assumption III, the densities per square kilometer in the year 2000 in East Pakistan and West Pakistan would be around 1,100 and 150 persons, respectively.

EPIDEMIOLOGIC SITUATION

The Indo-Pakistan subcontinent has always experienced various types of epidemic diseases and famines with devastating force and depressing regularity. Effective public health programs date back only a few decades. The general level of health has been poor, with high death rates and low life expectancy. Hence despite high fertility, population growth has been slow and halting; only recently has there occurred sustained population growth.[12]

The focus of this section is to explore the changes in mortality patterns as related to changes in the causes of death and other factors using the rather limited data available. The data which can be studied present changes in life expectancy at various ages, improvement in life expectancy over a period of time and changes in age-sex patterns of mortality with particular reference to age-sex differentials. Epidemiologic information in any other form is not available in Pakistan.

Epidemiologic situation

Age and sex specific mortality and changes over time: The recording of deaths by age and sex was too poor in the past to yield reasonable estimates of age-sex specific mortality. Thus for a very long time, such information

was not available and the overall trends in mortality were explained only in terms of crude death rates. The most recent mortality data are derived from the PGE Project. Data from other studies have also been presented to substantiate the observed lowered mortality trend in the country.

Crude death rates for the period 1901-40 of prepartition British India were derived by life tables constructed for each intercensal period and show that mortality under normal circumstances in the first decade of this century was about 44 deaths per thousand population with the rate rising sharply in some years to what Kingsley Davis has termed "catastrophes." A downward trend appears in the middle and late 1920s and continues through the 1930s. By 1940 the crude death rate was 32 deaths per thousand population.[13]

Because of three extraordinary events, the decade of the 1940s was unfavorable for the measurement of population growth, particularly for reliable estimates of mortality. First, the Second World War affected data collection indirectly in that government officers were placed elsewhere for war assignment. Public health programs appear to have suffered as a consequence. Second, the famine in Bengal in 1943 resulted in several million deaths and thus measurably increased annual death rates in 1943 and 1944.[14] Third, and more important, was the partition of British India, which created Pakistan as a separate nation in August 1947. The months preceding and following this event were a time of great unrest throughout the subcontinent. Thus there is every reason to assume that in the period 1946 to 1950 the previous trend toward lower death rates was completely checked.

The most recent estimates of death rates were derived from mortality data collected by the Population Growth Estimation Project (PGE). Both registration and survey techniques were used in a selected sample of rural

and urban areas. The death rate estimates from PGE data on mortality for the period 1962 to 1965 are shown in Table 10, which supports the evidence that the declining trend in the death rate which existed before the war reasserted itself in the early 1950s and that the level of mortality fell by as much as 33 percent in the period 1950 to 1965.

Proportionate mortality and changes over time: The age specific death rates for Pakistan during 1962-64 are quite high for both sexes for ages under five, especially during the first year of life (see Table 11). Infant mortality rates have been declining steadily during the last six decades, from 222 deaths per thousand live births in 1907 to 143 deaths per thousand live births in 1962-64. The decline since the decade 1931-40 when the rate was 168 deaths has been very gradual. More male infant deaths were reported in 1962-64 than female infant deaths, but in the one-to-four age group female mortality rates are higher than those for males.

The age specific mortality rate is lowest for the 10-14 age group, only three deaths per thousand population. It increases slightly and remains almost stable up to the 25-29 age group and then increases gradually with the advance in age. After age 50 a sharp increase is observed, which is consistent with findings in other countries.

Yousuf concludes both that males appear to be exposed to a lower risk of dying in East Pakistan and thus have a higher life expectancy than females and that the sex differential is comparatively large during the reproductive ages. In West Pakistan, on the other hand, males experience lower mortality up to age 50; beyond this age the male mortality rates exceed the rates for females.[15]

From the preceding discussions it may be inferred that mortality levels in Pakistan have registered a substantial decline since 1951; nevertheless,

Table 10

Estimates of Crude Death Rates, 1962-65
(Deaths per thousand population)

Year	Pakistan	East Pakistan	West Pakistan
1962	20	20	19
1963	19	29	19
1964	20	21	20
1965	18	20	16
1962-65	19	20	18

Sources: 1962 and 1963 figures are from Report of the Population Growth Estimation Experiment (Karachi: Pakistan Institute of Development Economics, 1968). 1964, 1965 and 1962-65 data are from F. Yousuf and Iqbal Alam, Statistical Series on Population Growth in Pakistan: PGE Birth Statistics, 1964-65, PGE Death Statistics, 1964-65 and PGE Base Population Statistics, 1964-65 (Research Reports Nos. 73-75; Karachi: Pakistan Institute of Development Economics) and from William Seltzer, Benchmark Demographic Data for Pakistan: A Review of Summary Estimates Derived from the PGE Experiment (Karachi: Pakistan Institute of Development Economics).

Table 11

Age and Sex Specific Death Rates, 1962-64

Age Groups	Deaths per Thousand Population Total	Male	Female
Under 1	143	153	133
1- 4	27	24	31
5- 9	6	6	6
10-14	3	2	3
15-19	5	3	7
20-24	5	4	6
25-29	5	4	7
30-34	6	5	8
35-39	7	6	9
40-44	8	8	8
45-49	10	12	9
50-54	13	13	13
55-59	19	20	18
60+	62	60	65

Source: F. Yousuf and Iqbal Alam, Statistical Series on Population Growth in Pakistan: PGE Birth Statistics, 1964-65, PGE Death Statistics, 1964-65 and PGE Base Population Statistics, 1964-65 (Research Reports Nos. 73-75; Karachi: Pakistan Institute of Development Economics) and from William Seltzer, Benchmark Demographic Data for Pakistan: A Review of Summary Estimates Derived from the PGE Experiment (Karachi: Pakistan Institute of Development Economics).

Pakistan still ranks as one of the high mortality rate countries of its region. Also evident is the fact that female mortality was in general higher than male mortality, except among infants, partly due to the high incidence of maternal mortality.[16]

Changes in life expectancy: In the Indo-Pakistan subcontinent it is a general notion that the first year after birth is a period of high risk, with life expectancy actually increasing as one moves from birth to age one. In the case of developed countries this improvement in life expectancy is a modest one--a year or two perhaps--but in developing countries having high mortality rates, the difference between life expectancy at birth and at one year can be as much as ten years. According to the 1962-64 life table, the expectation of life at each age was on the average about 2.6 years lower for males in East Pakistan compared to their counterparts in West Pakistan. At each age, females in East Pakistan were expected to live about 4.3 years less on the average than females in West Pakistan.

The expectation of life at birth dropped from 22.7 years in 1901-10 to 20.0 years in the decade 1911-20, a decline attributed to the influenza epidemic which resulted in an increase in the crude death rate from 44 to 50 deaths per thousand population. The expectation of life at birth shows a substantial increase in the decades 1921-30 (27.0 years) and 1931-40 (31.3 years). Over a period of 14 years, 1950-64, the life expectancy at birth in the country increased from 33.0 years in 1950 to 50 years in 1964, an increase of about 50 percent.

The expectation of life at various ages for Pakistan as computed by Yousuf from the PGE data of 1962-64 shows that the life expectancy for males is higher than for females up to age 65; beyond age 65, life expectancy for females is higher than for males as a whole in Pakistan.[17] Table 12

Table 12

Expectation of Life at Various Ages by Sex, 1962-64

Age in years	Pakistan		East Pakistan		West Pakistan	
	Male	Female	Male	Female	Male	Female
At birth	49.57	46.91	48.41	46.03	51.49	48.58
1	57.48	53.06	56.66	51.72	59.02	55.47
5	58.67	55.21	57.57	52.95	60.80	58.93
10	55.39	51.82	54.53	49.49	57.28	55.36
15	50.92	47.57	50.06	45.20	52.83	51.16
20	46.65	44.18	45.53	41.72	48.84	47.65
25	42.54	40.45	41.18	38.12	44.78	43.79
30	38.35	36.80	36.77	34.76	40.63	39.84
35	34.26	33.20	32.64	31.08	36.41	36.17
40	30.23	29.62	28.56	27.55	32.44	32.55
45	26.36	25.73	24.62	23.84	28.51	28.62
50	22.59	21.80	20.99	19.94	24.57	24.68
55	19.05	18.20	17.64	16.30	20.82	20.94
60	15.61	15.12	14.32	13.22	17.25	17.69
65	12.67	12.48	11.46	10.62	14.06	14.89
70	10.14	10.22	9.03	8.22	11.29	13.05
75	8.06	8.34	7.11	6.36	8.98	10.88
80	6.11	6.73	5.63	5.26	6.51	8.23
85	4.53	5.36	4.46	4.41	4.58	5.92
90	4.08	4.56	3.94	3.97	4.19	4.87
95	2.89	3.05	2.68	2.49	3.08	3.43

Source: F. Yousuf, "Abridged Life Table for Pakistan and its Provinces, 1962-64," Proceedings of the IUSSP Conference (Sydney, Australia, 1967), pp. 533-41.

indicates that in East Pakistan the life expectancy for males is higher at almost all ages than for females; the pattern in West Pakistan is different, the life expectancy for males being higher than for females up to age 40, and then the positions are reversed.

The trend of increase in life expectancy at birth can be viewed broadly in Table 13, which indicates that the expectation of life at birth for males is higher than for females in both provinces up to 1970. But after 1970 the mortality pattern is expected to be reversed and females in coming years will live longer than males.

In the future it is likely that mortality will decline further and life expectancy will be increased due to expansion of public health programs, economic development, the extension of education among the masses, the rising standard of living and other social uplift programs.

Leading causes of death and changes in cause-of-death ratio: Statistics on causes of death are not readily available; wherever they are available, their reliability is subject to question. The limited information that does exist is maintained only in hospitals, but even these figures are not collated or compiled nationwide. Moreover, the number of persons entering hospitals for medical care is only about seven to ten percent of the total population. No laws require death certificates for funerals or burials; such laws would be difficult to enforce even if they existed. Investigators and demographers have prepared various estimates on causes of death using the available information for the periods of prepartition British India (1930) and 1950-60 in Pakistan. The discussion therefore covers a very limited time period with very limited data.

Table 14 shows the 1930 statistics on major causes of death in undivided India. The highest percentages of total deaths occurred due to malaria

Table 13

Observed and Estimated Expectation of Life at Birth by Sex, 1962-64 to 1980-85

Years	East Pakistan Male (years)	East Pakistan Female (years)	West Pakistan Male (years)	West Pakistan Female (years)
1962-64	48.41	46.03	51.49	48.38
1965-70	52.89	51.98	54.35	53.33
1970-75	56.23	56.82	57.32	57.78
1975-80	58.89	60.84	59.64	61.40
1980-85	60.75	63.78	61.27	63.76

Sources: 1962-64 data are from F. Yousuf, "Abridged Life Table for Pakistan and its Provinces, 1962-64," Proceedings of the IUSSP Conference (Sydney, Australia, 1967), pp. 533-41; the remaining data are taken from L. L. Bean et al., Population Projections for Pakistan 1960-2000 (Karachi: Pakistan Institute of Development Economics, 1968).

Table 14

Crude Death Rates and Proportion of Deaths by Major Causes, Pre-Partition British India (Indo-Pakistan Subcontinent), 1930

Cause of Death	Deaths per Thousand Population	Percent of Total Deaths
Malaria	8.8	27.0
Complications connected with childbirth	3.0	19.2
Tuberculosis	5.0	15.4
Typhoid	5.0	15.4
Cholera	1.8	5.5
Diarrhea and dysentery	1.0	3.1
Pneumonias and other respiratory diseases	0.7	2.2
Plague	0.4	1.2
Smallpox	0.4	1.2
All other causes	6.7	20.6

(27.0 percent) and complications of childbirth (19.2 percent). Other major causes were typhoid (15.4 percent) and tuberculosis (15.4 percent). Only 1.2 percent of total deaths were due to smallpox. Since 1930, some attempts have been made on an individual basis to estimate vital statistics on the causes of death in 1959 with reference to East Pakistan. Malaria, tuberculosis and gastroenteric disorders accounted for about 400,000 to 500,000 deaths in East Pakistan in an average year in the late 1950s. Another estimate stated that tuberculosis took 100,000 lives in each province in the early 1960s.[18] At least 200,000 deaths annually in the country as a whole are attributable to malaria.

Estimates of cause specific death rates for West Pakistan were prepared by Khan for the late 1950s. For the period 1955-58 for Lahore City, the three former scourges--plague, cholera and smallpox--accounted for less than one percent of total deaths. Fevers (which included malaria, typhoid, some pneumonia and puerperal fever) accounted for over three quarters of deaths, and respiratory diseases accounted for about ten percent.[19] Figures on causes of death obtained from three leading hospitals revealed that 31 percent of all deaths were from typhoid; 28 percent from pneumonia and other respiratory complications; four percent, malaria; five percent, hepatitis; seven percent, meningitis and 30 percent, miscellaneous and diseases not diagnosed.[20] The relative figure for malaria is perhaps explained by its ease of diagnosis; that is, it is not often called merely a "fever" but is called properly "malaria." These figures also suggest that typhoid remains an important factor in overall mortality.

Table 15 shows that malaria, typhoid, dysenteries and tuberculosis took the largest number of lives in 1960, in both East and West Pakistan. Complications connected with childbirth also lead to a large number of deaths.

Table 15

Crude Death Rates and Proportion of Deaths by Major Causes, 1960

Cause of Death	East Pakistan Deaths per Thousand Population	East Pakistan Percent of Total Deaths	West Pakistan Deaths per Thousand Population	West Pakistan Percent of Total Deaths
Diarrhea and dysenteries	3.0	15.0	3.0	15.0
Typhoid	3.0	15.0	3.0	15.0
Malaria	3.0	15.0	2.5	13.0
Tuberculosis	2.5	12.0	3.0	15.0
Complications of childbirth	2.0	10.0	2.0	10.0
Pneumonia and other respiratory diseases	1.0	5.0	1.0	5.0
Cholera	0.5	2.5	N.A.	N.A.
Smallpox	0.2	1.0	0.1	1.0
All other causes	5.0	25.0	5.0	25.0

Source: C. Warren Robinson, Recent Mortality Trends in Pakistan (Karachi: Pakistan Institute of Government Economics).

Over a period of 30 years, 1930-60, the crude death rates for cholera, smallpox, typhus and tuberculosis have declined, but the crude death rates for pneumonia and other respiratory diseases, diarrhea and dysenteries have increased substantially during the same period.

The Third Five-Year Plan (1965-70) of Pakistan estimates mortality from malaria at one death per thousand population, tuberculosis at one to 1.5 deaths per thousand population and diarrhea and dysenteries at 3.2 deaths per thousand population. The plan also states that "approximately half of all recorded deaths are children below the age of 10 years and of these about half are of children less than one year." In other words, infant deaths comprise 25 percent of total deaths.[21]

Changes in morbidity: In Pakistan no successful attempt has been made up to the present for the routine collection of statistical information on morbidity. The only available information is hospital data. Although the hospital morbidity data have little relevance to the general morbidity pattern in a population, they can give some indication of conditions in the community. Pervez, Shamshad and Ahmed generated information hospital morbidity patterns by taking inpatient data during 1963-65 from Jinnah Postgraduate Medical Center Karachi.[22] The statistics on morbidity thus collected were classified on the basis of international classification of disease 1957 (revised) into fifteen major disease groups, as shown in Table 16.

About 30 percent of the total cases of illness fall in the group "deliveries and complications of pregnancy, childbirth and puerperium." It is estimated that this group may be even higher. About 15 percent of the total cases of morbidity may be attributed to diseases of the nervous system and sense organs. Infection and parasitic diseases comprise the third largest group, about 11 percent of the total cases reported, the major disease being

Table 16

Number and Percentage Distribution of Morbidity Cases in Jinnah Postgraduate Medical Center Hospital, 1963-65

Classified Disease Groups	Number of Cases			Percentage of Cases		
	1963	1964	1965	1963	1964	1965
Infective and parasitic diseases	1,635	1,539	1,326	11.84	10.66	10.05
Neoplasms	611	745	925	4.42	5.17	7.01
Allergic, endocrine system, metabolic and nutritional diseases and diseases of the blood and blood-forming organs	468	473	478	3.39	3.28	3.62
Mental, psychoneurotic and personality disorders	201	203	170	1.46	1.47	1.29
Diseases of the nervous system and sense organs	2,144	2,100	2,030	15.52	14.56	15.39
Diseases of the circulatory system	851	870	891	6.16	6.03	6.75
Diseases of the respiratory system	628	574	472	4.55	3.98	3.58
Diseases of the digestive system	1,170	970	1,008	8.47	6.72	7.63
Diseases of the genito-urinary system	789	825	688	5.71	5.72	5.21
Deliveries and complications of pregnancy, childbirth and the puerperium	4,172	4,419	3,655	30.20	30.63	27.78
Diseases of the skin and cellular tissue, and diseases of the bones and organs of movement	187	269	301	1.35	1.87	2.28
Congenital malformations	67	53	43	0.49	0.37	0.33
Certain diseases of early infancy	1	1	2	0.01	0.01	0.01
Symptoms, senility, ill-defined conditions	422	593	415	3.05	4.11	3.14
Accidents, poisonings and violence	468	791	790	3.39	5.48	5.99
Total	13,814	14,425	13,194			

Source: A. M. Parvez et al., "Hospital Mortality Pattern in Jinnah Post-Graduate Medical Centre," Pakistan Journal of Medical Research, Vol. 8 (October 1969), p. 308.

tuberculosis, followed by dysentery, typhoid fever, infectious hepatitis and malaria. About seven percent of cases each year were reported with diseases of the digestive system, particularly cases of intestinal obstruction, hernia, appendicitis and ulcer of the stomach.

Health services

Structure and coverage of the health system: The responsibility for health planning and policy making for Pakistan rests with the Central Ministry of Health; implementation is the task of the provinces. The health section of the planning commission scrutinizes plans to determine technical and financial feasibility, and the National Economic Council gives final approval. The Ministry of Health is headed by the Minister for Health, Labor, Social Welfare and Family Planning. The Secretary of Health, under the minister, also supervises a large number of officers in Islamabad. In addition, Lahore, Karachi, Chittagong and Dacca each have the services of one assistant drugs controller who is connected with the central ministry.

The Central Ministry of Health includes a number of departments which direct various sectors of health care in Pakistan. The Central Health Establishment in Karachi has administrative control of the J.P.M.C. in Karachi, the Islamabad Hospital and the Ayub Central Hospital in Dacca. The tuberculosis control directorate in Karachi is responsible for planning, policy and foreign aid; again, implementation is up to the provinces. Other departments are the School of Tropical Medicine and Public Health in Dacca, the National Health Laboratories in Islamabad and the Drug Research Institute in Islamabad.

Professional organizations such as the Pakistan Medical Council and the Pakistan Nursing Council are autonomous bodies working in cooperation with the central and provincial governments.

The health system in East Pakistan is headed by the Secretary of Health, under whom is the Director of Health Services. Five deputy directors of health services are appointed, one each for preventive health, medical education and administration, planning and development, rural health centers and maternal and child health services.

Each of the four districts of East Pakistan (Dacca, Rajshahi, Khulna and Chittagong) also has a deputy director of health services, a civil surgeon in charge of curative medicine and a chief medical officer or district health officer in charge of preventive medicine. There are now seven chief medical officers, who are directly responsible to the provincial government and 12 district health officers supervised by the local bodies.

The Director of Health Services is also chairman of the State Medical Faculty which deals with registration, curriculum, examinations and inspection of paramedical personnel. All medical and paramedical teaching and training institutes, as well as specialized institutions like the Chest Disease Institute, are supervised by the Director of Health Services.

In West Pakistan, the health services organization is somewhat different from that of East Pakistan. The secretary is the head of the Provincial Health Department. Two joint secretaries have staff to handle medical (curative) and public health (preventive) services. The deputy secretary is responsible for administration and various section officers take charge of planning, maternal and child health and so on.

In each of the six regions of West Pakistan (Peshawar, Lahore, Sargodha, Khairpur, Hyderabad and Quetta) there is a regional director of health services with two assistant directors, one each for medical and public health services. Each has his own staff. A health educator is also attached to the regional office.

At the district level the district health officer handles administration and public health in rural areas, the civil surgeon for urban areas is in charge of the district headquarters and is responsible for the medico-legal work in that area, and the medical superintendent supervises public health work in urban areas.

The objectives of the health sector as set forth in the fourth plan (1970-75) are quoted below in order to give some idea of the thrust and coverage of Pakistan's health system.

1. To improve the living and working environment of the population through better sanitation, water supply, disposal of sewage, disposal of industrial wastes, control of insects and disease vectors, better housing facilities, the prevention of air and water pollution and epidemiological services

2. To provide better nutrition and nutritional education

3. To develop and improve comprehensive health services through health centers, subcenters and polyclinics for maternal and child health care, care of the sick, implementation of the family planning program, immunization of children and of adults. Maternal and child health service should contain a strong element of nutrition.

4. To provide special health care to infants, children, adolescents, mothers and the handicapped with particular attention to reducing infant and maternal mortality through comprehensive health care

5. To strengthen measures for the control of gastrointestinal diseases, tuberculosis and other communicable and mental diseases

6. To set up industrial health establishments to fight against the most prevalent diseases, to care for workers and their families and to rehabilitate workers whose job efficiency has been reduced by industrial diseases or accidents

7. To provide a sufficient number of referral hospitals with the special services to deal with seriously ill patients at the subdivision and district levels

8. To provide and ensure sufficient drugs for preventive health measures

9. To train doctors, teachers, specialists, paramedical personnel and auxiliary health workers and

10. To integrate services at all levels from district to union.[23]

Patterns of change in the health system: Very little change has occurred in the structure of the health system since 1947. Apart from those under the jurisdiction of the government, health services are provided by local union councils and committees, district boards and private agencies like the Red Cross and other charitable organizations. A movement to centralize all these institutions has gathered some support, but the main problem has been a shortage of funds.

Efforts have been made to provide more technical and professional leadership in the health sector, and several secretaries of health in the provinces have been medical persons. The health organization has generally been weak with low prestige and has experienced difficulty in dealing with the non-technical bureaucracy. Very little analysis has been made of the requirements and needs of the country, and the education of medical and paramedical personnel does not qualify them to deal with the existing health problems of Pakistan. Numbers of medical personnel consequently leave the country each year seeking job satisfaction elsewhere.

The rural health program is supposedly the foundation on which the health service must be built. However, single purpose disease programs continue to be promoted, most of which are unsuccessful in the long run because of inadequate maintenance structures.

Specific indicators: There were 12 medical colleges in Pakistan (six in each wing) at the beginning of the third plan. The objectives of the third plan included improving and strengthening all these colleges and establishing one teaching hospital in West Pakistan and two medical colleges in East Pakistan. The total number of doctors was expected to rise from 15,600 in 1964-65 to 19,800 in 1969-70.[24]

The distribution of doctors is unbalanced, with the larger urban areas having as many as one doctor per 700 population while in some rural areas the ratio is one doctor to 10,000 or 20,000 population. In some remote areas, the ratio may be more like one doctor per 50,000 people. Nurses are even more rare, about one nurse to 60,000 people. The ratio of lady health visitors to population is one to 80,000. These three groups of professional healers constitute 9.6 percent of the total number of healers available to the rural population. When the numbers of all three groups are combined, the healer/population ratio is one to 20,000.

The rural population is served primarily by non-scientific healers and paramedical personnel who work as private practitioners. Trained dais are available but only one for each 29,100 persons.[25]

However, the target of the third plan was surpassed and 5,000 doctors were trained. At present, about 1,000 doctors complete their training each year, a number which is likely to increase to 1,200 or 1,300 during the fourth plan because new colleges are coming into full operation. Table 17 shows the numbers of registered doctors joining the medical force from 1960 to 1967.

At the beginning of the third plan, there were 35,500 hospital beds in the country (9,200 in East Pakistan and 26,300 in West Pakistan) or 0.3 beds per thousand population. A plan to increase the number of beds to 48,300 by 1969-70 included the addition of beds being provided under other programs of the health sector, such as those in rural health centers and medical institutions in the private sector. Of the 12,800 additional beds to be provided, 7,800 were for East Pakistan and 5,000 for West Pakistan. In addition to the improvement and expansion of all Sadar and sub-divisional hospitals, fourteen 50-bed hospitals were planned for rural areas in East Pakistan. In West Pakistan, work on construction of five new district

Table 17

Number of Registered Doctors, 1960-67

Year	East Pakistan Number Registered	East Pakistan Progressive Total	West Pakistan Number Registered	West Pakistan Progressive Total	Total Number Registered	Total Progressive Total
1960	432	5,503	517	6,485	949	11,988
1961	349	5,852	770	7,255	1,119	13,107
1962	294	6,146	639	7,894	933	14,040
1963	224	6,370	725	8,619	949	14,989
1964	237	6,607	799	9,418	1,036	16,025
1965	257	6,864	664	10,082	921	16,946
1966	220	7,084	763	10,845	983	17,929
1967	253	7,337	887	11,732	1,140	19,069

Source: Annual Report of the Director General of Health J.S. (Ex-officio), pp. 46-47.

hospitals was to be completed, while those in urban areas would be further improved and expanded. Under the Central Health Program, a 500-bed hospital at Islamabad and a 200-bed facility in Dacca were to be completed, and the central government was to establish a 50-bed hospital at Chittagong.

The plans for increasing the number of hospital beds in the country were not realized during the third plan. Only 3,650 beds were added (30 percent of the target), and the current bed/population ratio is one bed for every 3,300 persons.

The fourth plan aims to provide 25,300 additional hospital beds at all levels, thus increasing the total number of beds in the country to 64,300, or one bed for every 2,350 persons.

The major problem in implementing such a large program will be supplying the demand created for nurses. Only 5,400 nurses are available at present, half the number needed according to international standards. Since nurses require four years of training, it will be difficult to increase the supply by more than half even though the training institutes are currently graduating 500 nurses each year. The nurse/doctor ratio is one to four, whereas in most developed countries there are two nurses for every doctor.[26]

Table 18 gives figures for medical personnel and facilities as envisioned by the third and fourth plans.

Health programs

A considerable part of health services in Pakistan is devoted to implementation of specific kinds of health programs, some of which are described below.

Rural health programs: Before the second plan, no organized health service was available for the vast majority of Pakistan's rural population. In 1960 a rural health program was initiated and a network of rural health

Table 18

Benchmarks and Physical Targets for the Third and Fourth Five-Year Plans in the Health Sector

	Doctors	Nurses	Lady Health Visitors	Medical Schools	Nursing Schools	Rural Health Centers	Rural Health Subcenters	TB Clinics	Hospital Beds	TB Beds
Third Five-Year Plan, 1965-70										
Pakistan										
Benchmark, 1964-65	15,600	3,600	1,047	12	18	119	225	96	35,500	2,500
Target, 1969-70	19,800	5,400	2,750	14	24	860	-	181	48,300	3,450
West Pakistan										
Benchmark, 1964-65	9,725	3,292	1,006	6	21	79	225	87	25,600	2,400
Target, 1969-70	13,100	4,400	1,900	6	-	400	-	127	33,000	-
East Pakistan										
Benchmark, 1964-65	6,700	475	100	6	3	40	-	-	7,600	920
Target, 1969-70	8,100	1,000	850	9	9	260	780	-	14,700	1,206
Fourth Five-Year Plan, 1970-75										
Pakistan										
Benchmark, 1969-70	21,452	5,400	2,143	13	27	255	400	139	39,023	-
Target, 1974-75	26,327	13,840	5,321	15	35	1,150	3,320	246	64,300	-
West Pakistan										
Benchmark, 1969-70	13,400	4,700	1,881	6	21	83	250	95	29,300	3,000
Target, 1974-75	16,150	8,340	2,781	7	25	550	1,650	195	37,000	4,700
East Pakistan										
Benchmark, 1969-70	8,052	700	262	7	5	147	150	-	9,723	1,200
Target, 1974-75	10,505	5,000	2,540	8	9	600	1,670	-	25,000	-
Percentage Increase Over 1969-70										
Pakistan	23	90	83	15	30	300	700	78	62	-
West Pakistan	21	56	45	16	20	330	540	107	28	57
East Pakistan	24	86	336	14	80	236	1,009	-	140	-

Source: The Fourth Five-Year Plan (1970-75) (Pakistan: Government of Pakistan Planning Commission).

centers was created, covering both wings of the country. Each rural health center consists of a primary unit and three subcenters, including facilities for medical treatment, maternal and child welfare, family planning, environmental sanitation, control of communicable and infectious diseases, health education and the compilation of vital statistics. The primary unit is manned by a male and a female doctor, a health visitor, health laboratory technicians and other auxiliary staff. The subcenters are staffed mostly by paramedical personnel until doctors become available. Family planning services and comprehensive health care will be provided.

It was estimated that by 1965, the end of the second plan, 200 rural health centers would be in operation, 100 in each wing. According to the third plan, 860 rural health centers and 2,400 subcenters should have been functioning by the end of the period. However, only about 230 rural health centers have actually been commissioned.

The ultimate aim is to provide one center for every 50,000 persons. On the basis of 1975 population projections, 3,050 primary centers and 9,150 subcenters would be needed to achieve this ratio. The rural health service has, however, not been given top priority, and it may not be possible to cover the whole country during the fourth plan because of financial and administrative problems.

Maternal and child health programs: Adequate maternal and child health services in Pakistan require one maternal and child health center for every 10,000 population, at an expenditure of 12,000 rupees per year for each center. Twelve thousand maternal and child health centers are needed in the country; at present, there are 702 such units (585 in West Pakistan and 117 in East Pakistan); mostly in urban areas. Because of lack of financial resources and inadequate professional supervision, these units are functioning poorly.

Malaria eradication program: The program is divided into four phases: preparatory, attack, consolidation and maintenance. Implementation of the malaria program is supervised by an autonomous central policy making organization called the Malaria Eradication Board. Two provincial boards are responsible for the actual execution of the program. Six districts in East Pakistan with a total population of 19 million had been covered at the beginning of the third plan. In West Pakistan, 22 districts were covered, a total population of 28.4 million.

During the third plan, work was extended with the aim of covering the entire country by 1970, when it was estimated that 20 million of the population would be totally free from malaria. For another 45 million people, the disease was expected to occur rarely. Since the maintenance phase after elimination of the disease would be the responsibility of the normal health services, the malaria program was coordinated as much as possible with the development of health services. The malaria eradication program as now being implemented does not include the urban areas. However, during recent years, a considerable upsurge in the incidence of malaria in urban areas has occurred, as well as in rural areas, especially in West Pakistan. This alarming situation makes it imperative to evaluate the existing program and to begin an eradication campaign in the towns and cities.

Tuberculosis control: The eradication of tuberculosis is linked with improvement in the general living standards of the people and as such will take a long time. The Central Directorate of Tuberculosis Control is a department of the health division responsible for planning, technical supervision, assessment and surveys and has mobile research and assessment teams. The implementation of the program is the responsibility of the provincial organizations. A master plan for effective control over a period of 20 years

has been worked out, and a three-pronged attack on the disease was continued throughout the third plan.

The B.C.G. vaccination program was started in 1949 and by the beginning of the third plan, 56 million persons had had tuberculin tests and 22 million had been vaccinated. Tuberculin testing has now been stopped and direct vaccination introduced for those aged zero to 15 years except in the Punjab. The total number vaccinated is now nearly 41 million.

Tuberculosis clinics have been set up where ambulatory treatment can also be done. At the rate of one clinic for 100,000 population, 1,900 clinics must be provided in order to cover the entire population in the next 20 years. At the beginning of the third plan, 96 clinics were in operation and 75 more were to be set up in West Pakistan. In East Pakistan, ten clinics were to be started in urban areas; in the rural areas, tuberculosis clinics would function as part of the rural health centers.

Although future emphasis is on protection through vaccination and through the clinics, the number of beds for the treatment of tuberculosis cases needs to be increased to some extent. There were approximately 2,500 beds at the beginning of the third plan, and an additional 950 were to be added (500 in West Pakistan and 450 in East Pakistan). The total number of beds now is 4,000. The actual achievement during the third plan was disappointing. In East Pakistan, 22 clinics already begun were completed, whereas in West Pakistan only eight clinics of the planned 45 are likely to be set up.

FAMILY PLANNING PROGRAMS

Deliberate population policies

Some thirty or forty years ago, the interest of nations in population matters stemmed from low rates of growth; the source of such

interest today is usually high population growth rates. The current notion that high rates of population growth can be detrimental is a reversal of the institutional attitude which identified a large and growing population with prosperity, strength and prestige. In epochs when death rates were high and when numbers were an important component of military strength, this view was not without merit. However, today, when military strength is more a matter of technology than numbers and when population is growing at a rate that is economically burdensome, developing countries like Pakistan have adopted policies and programs designed to reduce rates of population growth. Obviously, the ultimate objective behind such policies and programs is to raise the standard of living of the common man--an objective to which all national governments are committed.

As in other countries, the development of the national family planning program in Pakistan had its roots in the early efforts of volunteers beginning soon after independence in 1947. In 1952-53 these efforts resulted in the formation of voluntary family planning associations which provided contraceptive services in major urban centers--Karachi, Lahore and Dacca. In 1954, the Family Planning Association of Pakistan was affiliated with the International Planned Parenthood Federation. The most important contribution of this group, which included wives of leaders in government and business, was its success in creating a climate of opinion favorable to fertility control and in persuading the government to give official support to family planning activities.

Although the First Five-Year Plan assumed a population growth as low as 1.4 percent,[27] it allocated 500,000 rupees ($100,000) for support of family planning through voluntary agencies. Family planning boards were set up within the health directorate in each province to approve family planning

projects and allocate funds. Programs were initiated through the hospitals and clinics of the army, air force, railways, the Family Planning Association in urban areas and through the village aid administration in rural areas. In 1959, the Population Council of New York was requested to survey the situation and make recommendations to the Central Ministry of Health for organizing an effective program of family planning in the country. Accordingly, two experts from the Population Council assisted the government of Pakistan in formulating a National Family Planning Program.

The allocation for family planning was substantially increased for the Second Five-Year Plan period (1960-65), and an amount of 35.5 million rupees ($ 7.2 million) was earmarked to be spent on family planning through the existing health services of the country.[28] Some 1,250 doctors, 250 lady health visitors and 200 nurses and midwives were trained in family planning techniques during this period. A National Research Institute was set up to conduct research on approaches and methods to be employed in family planning, along with five training and research centers established in East and West Pakistan.

During the second plan, family planning services were located in 2,750 health clinics, and pilot projects in personnel training, health education and medical social research were established with the assistance of the University of California and Johns Hopkins University, U.S.A., the Swedish International Development Authority and the Population Council. The experience gained from these projects resulted in the development of a family planning program for the Third Five-Year Plan (1965-70). This was also a period of growth in demographic research, and a number of studies and surveys were carried out by the Pakistan Institute of Development Economics and the Central Statistical Office with the support of the Population Council.

The Third-Five-Year Plan (1965-70), which was a part of the long-term Prospective Plan (1965-85), committed a sum of 284 million rupees ($60 million) to family planning and spelled out a clear population policy tied to economic development.[29] The fact that while financial and other constraints resulted in expenditure short-falls in most sectors of development during the plan, the outlay on family planning exceeded the plan allocation by 25 percent shows the importance assigned to family planning.

In recognition of the sizeable task ahead and the importance of fertility control to Pakistan's social and economic development, the fourth plan (1970-75) aims at reducing the birth rate from 41.8 to 34.4 per thousand by preventing nine million births. (It is estimated that three million births were prevented during 1965-70.) To achieve this objective, 64 percent of all women in the reproductive age groups will be induced to accept contraception. At present, only 28 percent are estimated to have practiced family planning at one time or another. The cost of preventing a single birth will also decrease from 114 rupees in 1965-70 to 77 rupees, which compares very favorably with costs in other countries. The keen interest and the all-out government support to an active program of population control, aimed at bringing about a balance between the "man and resources," has surprised most observers.

Migration policy: Migration is a necessary element of normal population adjustment. A nation can gain population through the fertility of its inhabitants or by immigration, and it can lose population through deaths among its residents or by emigration. Migration is able to offset completely or to reinforce greatly the population change resulting from natural increase. Thus, as a component of population change, migration occupies a central place.

All migrations within and/or outside the national boundaries are usually prompted by economic and political factors. While liberal migration laws

and policies coupled with resources to support a large population attract immigrants, meager resources and a disproportionately large population encourage emigration resulting in reduction of pressure on the land. In other words, migration laws and policies are adopted by a nation in a deliberate manner, depending upon its resources and manpower needs. Developing nations like Pakistan, where the pressure on land is significant, usually have a somewhat liberal emigration policy. For example, a large number of Pakistanis emigrated to Great Britain until the early 1960s when the British government imposed certain restrictions.

Since the population of the area constituting Pakistan has always been too large in proportion to its resources, the emigration that took place did not relieve the situation significantly. On the contrary, the unprecedented influx of Muslim refugees from India following the partition of the Indian subcontinent in 1947 further aggravated the imbalance of people and land. During that period, some 15 million Muslims came to Pakistan, while only about a fourth of this number went out of Pakistan.

Pronatalism: Although there is no acknowledged government policy that may encourage large families, the age-old customs of universal and early marriage and the institution of "joint family" have been factors which resulted in large families in the past. Even today, the force of tradition is still great, particularly in the countryside. However, with modernization leading to general social change, traditions as regulators of values and conduct are losing their importance, especially in the fast growing and newly developed urban centers. Since urban living can hardly support a large family and since much rural-urban migration is taking place, the smaller nuclear families are gradually replacing the extended families of the past.

The custom of early marriage has also undergone a change throughout the whole country due to growing enthusiasm for higher and professional education

among women. Upon completion of her education, a woman may now take a job as a doctor, a teacher, or a lawyer. In brief, besides the national program of family planning directed to encourage a small family norm, the rate of urbanization, emancipation of women and rising expectations act as barriers to pronatalism.

Program base for policy formulation

In the first few years of its existence, the voluntary Family Planning Association of Pakistan received only nominal financial support from the government. The population problem was recognized by the government during the First Five-Year Plan, when an all-out effort was made to develop the economy of the country in a planned and integrated manner. Accordingly, a provision of 500,000 rupees was made at the central level to help promote family planning through voluntary efforts. During the Second Five-Year Plan, the government allocation was raised to 35.5 million rupees.

The specific targets of the program were to cover 1.2 million families during the plan or about ten percent of women of childbearing age; to establish 3,000 family planning centers in existing health facilities and develop a distribution system for conventional contraceptive supplies; to train the required motivational and technical personnel, including 1,200 health personnel each year; and to promote research and administration projects in the field of family planning. Although the program failed to achieve the targets set forth, its pilot projects, research and field activities provided experience to a sizable cadre of professional workers.

Knowledge, attitude and practice (KAP) studies: Due to the importance assigned to family planning research in the second plan, several research studies relating to medical, demographic and social aspects of family planning were initiated. Since 1963, 19 knowledge, attitude and practice studies have been conducted in East and West Pakistan, besides the National Impact Survey,

which was begun in 1968.[30] In addition to general KAP studies which have reflected the changes in attitude, knowledge and practice towards family planning at different times, a few studies were also conducted on the attitudes of teachers, doctors, politicians and the like. While an overwhelming majority of doctors and teachers, according to these studies, had knowledge of family planning, about one half of the teachers had a positive attitude but a much smaller number actually practiced contraception.[31] However, in the case of medical practitioners, a majority had a favorable attitude, and 50 percent had practiced some contraceptive method.[32] Over a period of time KAP studies relating to politicians showed an increasingly positive relationship between knowledge, attitude and practice. No systematic research to explore the attitudes of various religious groups has been conducted; however, based on newspaper reports, the fertility of minority groups has been increasing for the last ten years. Studies of other special groups, like factory and dock workers, have also revealed an increasingly positive reaction to family planning since 1965.

The findings of studies conducted by various groups within and outside the country have always been available to the administrators and planners, and due cognizance has been taken of these resources. In fact, due to the results of various studies and the experience gained over time in the field, several modifications were made in the administrative structure at the policy, planning and evaluation levels as well as at the different tiers of program operation.

Abortion problem: No studies have been undertaken to assess the extent of abortion in Pakistan. Abortion, being prohibited by law and religion, is done in a clandestine manner, and people hesitate to discuss it with strangers. These constraints limit knowledge about the magnitude and nature of the abortion problem.

Visibility of population problem: Since the turn of the present century, the area constituting Pakistan has experienced increasing population growth, from 45.5 million in 1901 to 75.8 million in 1951 to 93.8 million in 1961.[33] For the first half of the century, the annual growth rate was just over one percent per year. During the next decade (1951-61), the increase averaged two percent per year. Pakistan's planning commission observed, however, that the 1961 Census was subject to a considerable underenumeration, particularly for the 0-3 age group and for females. When corrections were made for this undercount, the population of the country in 1961 was estimated to be about 101.5 million. According to the planning commission estimate, the total population of the country in July 1965 was 115.6 million with a growth rate approaching three percent per year, which is among the highest in the world.

The population dilemma of Pakistan is further aggravated by the fact that the rapidly falling death rates of the 1950s and 1960s combined with continuing high birth rates are yielding a bounteous harvest of young adults. The first cohort of these young people is now moving into the reproductive years of its life cycle. The annual increase in the number of women of childbearing age will rise from one million in 1960 to an estimated 1.7 million in 1971, 2.1 million in 1976 and could reach three million annually by 1986.

The economic implications of such rapid population growth are well-known. In Pakistan, more than 45 percent of the population are children under 15 years of age and hence are predominantly income consumers rather than income producers. The cost of providing even minimum education, health and welfare services seriously affects the country's capacity for capital formation, which is so essential to future development.

The high growth rate coupled with low per capita income has created a vicious cycle of poverty, illiteracy, unemployment, malnutrition, inadequate

housing and poor health which ultimately cause lower working efficiency, lower productivity and retardation of economic growth. A population problem of such magnitude obviously requires gigantic efforts, particularly if the 1985 goal of 392 rupees per capita income is to be achieved.[34] Against the background of this crisis situation, Pakistan embarked upon a National Family Planning/Population Control Program in July 1965.

Programs for family planning

Based on the experience of the Second Five-Year Plan, the scheme during the third plan was postulated on six basic assumptions:

1. Family planning efforts need to be oriented toward public relations rather than being merely clinical.

2. Its operations should be conducted through autonomous bodies with decentralized authority at all tiers right down to the grass roots level, for expeditious decision making.

3. Monetary incentives play an important role.

4. Interpersonal motivation in terms of life experience of the clientele through familiar contacts coupled with mass media of publicity can produce a sociological breakthrough.

5. Supplies and services in all related disciplines should be available at the doorsteps of the people.

6. Training, evaluation and research should be multidimensional and continual as an integral part of the program.[35]

The minimum goal set for the program during the five-year period 1965-70 was to reduce the birth rate from an estimated 50 to 40 per thousand by reaching all the estimated 20 million fertile couples by 1970, assuming further moderate decline in the death rate from 20 to 15 per thousand. The ultimate goal of the program is to bring the population growth rate down to 1.5 percent by 1985.

The actual performance during the third plan reveals increasing prevalence of contraceptive practices. Besides reaching its targets, the greatest

achievement of the program during the third plan was the sociological breakthrough which in turn should facilitate reduction in fertility in future years. Calculations made with the help of the indices that are now available indicate that the 3.1 million IUD insertions, one million sterilizations and 6,496 million units of conventional contraceptives made available during 1965-70 were likely to bring the birth rate down to 41.8 by 1970, although evidence to corroborate this estimate is not yet available.[36] However, the planning commission has assumed a birth rate of 45 per thousand for the fourth plan.

Based on the performance of the third plan, the Fourth Five-Year Plan (1970-75) envisages a further decline of the crude birth rate from 41.8 to 34.4 per thousand by 1975. The crude death rate for the corresponding period will also decline from 17.5 per thousand to 15 per thousand which will give a growth rate of 1.7 percent per year in 1975. To achieve the target, the number of contracepting couples using IUDs must increase from 1,713,000 in 1970 to 3,988,000 in 1975, the number of sterilizations must be 2,688,000 in 1975, and the number of couples using conventional contraceptive methods must increase from 2,171,000 to 2,657,000 during the period from 1970 to 1975. The total number of couples practicing all three types of contraceptive methods must increase from 4,824,000 in 1970 to 9,333,000 in 1975.[37]

The third plan has provided an effective infrastructure for the family planning program at all levels, from policy and planning to actual delivery of supplies and services at the doorsteps of the people, even in the most remote corners of the country. The basic features of the organizational structure as developed during the third plan have been retained, the field structure has been further strengthened, and several research units have been grouped together to develop a more meaningful program of field-oriented

research during the fourth plan. The fourth plan has also developed a more comprehensive inspection arrangement by converting the two evaluation units into a central inspection directorate and by establishing regional (provincial) and district inspection teams.

National: At the national level, the Pakistan Family Planning Council has been established as an autonomous body under the Ministry of Health, Labor, Social Welfare and Family Planning with the central minister as its chairman and the provincial ministers as vice chairmen. The council, besides a central health and family planning secretary, has a number of central secretaries and some non-officials as its members. The family planning commissioner is the member-secretary and the executive head of the council. The primary functions of the council are policy, planning and overall implementation of the program; research, evaluation and training; coordination and advice to the central government on family planning. Figure 1 diagrams the organizational structure.

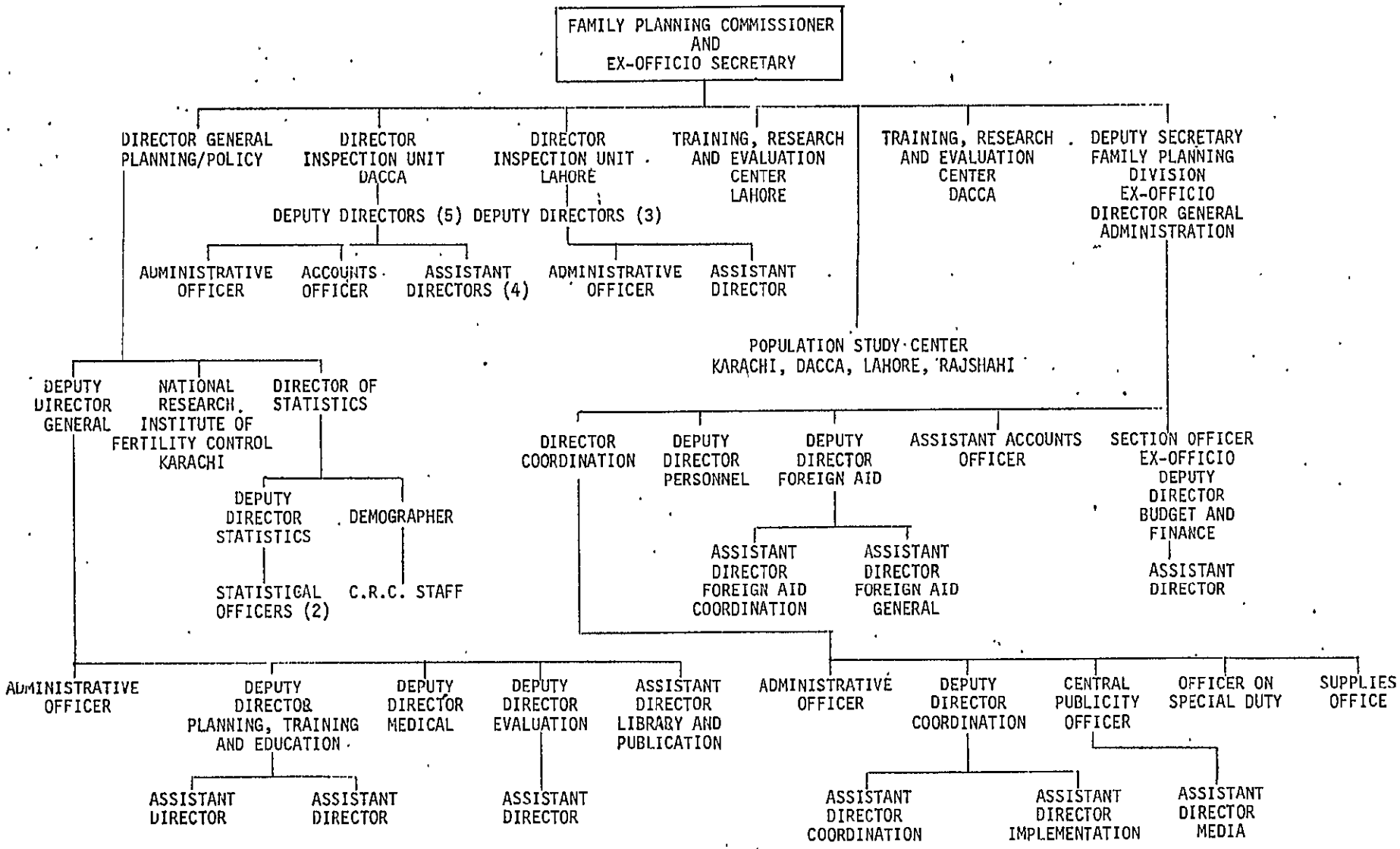
Provinces: Similar to the structure at the national level, each of the provinces has a family planning board with the provincial minister of health and family planning as its chairman, and secretary of the health and family planning department as vice chairman. Secretaries of other relevant departments and non-officials are the members of the board, and a senior civil servant functions as the administrator/secretary of the board. The provincial boards are responsible for the implementation of the program and its inspection at the local and regional levels in their respective provinces. The regional inspection teams periodically audit the performance of the program in the province.

The provincial boards also have within their charge training-cum-research institutes (three in each wing) to care for inservice and pre-service training needs of personnel engaged in the program.

Figure 1: Organization Chart of Pakistan Family Planning Council at Islamabad, Karachi, Lahore and Dacca

ORGANIZATION CHART OF

PAKISTAN FAMILY PLANNING COUNCIL AT ISLAMABAD, KARACHI, LAHORE AND DACCA



Districts: Each program district has its own family planning board which is headed by the deputy commissioner (chief of district administration) and draws its membership from among the prominent citizens of the district. A publicity-cum-executive officer serves as the secretary of the board and acts as the chief executive of the program. Districts having more than 24 family planning officers have been provided with an additional publicity-cum-executive officer. The district officer is assisted by a district technical officer (medical doctor), surgical officer, inspection officer, training officer, family planning officers, family planning doctors (full-time and part-time), family planning counsellors, lady family planning visitors, family planning workers/organizers, lady health visitors and agents of contraceptive distribution. The major functions of the district family planning organization, which is the basic unit for field implementation, are publicity and education, distribution and sale of contraceptives, provision of clinical services and couple registration in project areas.

Voluntary efforts: When the family planning scheme was introduced in July 1965, voluntary agencies such as the Family Planning Association and its affiliates were the only repository of expertise and experience in the field. These agencies did a commendable job of introducing family planning to the people at a time when even casual discussion of the subject was not socially acceptable. In view of these facts, the third plan made provision for the agencies to receive 8.8 million rupees per year during 1965-70.[38]

Although the major responsibilities in the field are now shouldered by the government program, the Family Planning Association and other voluntary agencies are still actively engaged in the field, particularly in the area of public relations. Their work is of fundamental importance, for it involves and enlists the support of influential leaders and social workers. In recognition of the contribution being made by voluntary agencies, especially the

Family Planning Association, a provision of 25 million rupees has been made for financial assistance to these agencies during the fourth plan.[39]

A summary of achievements of the third plan has already been made. At present, the family planning program employs 53 district publicity-cum-executive officers, 1,344 family planning officers, 2,443 medical personnel, 1,307 paramedical personnel, 2,601 union council secretaries, 30,218 part-time dais and 39,637 agents registered for the distribution of conventional contraceptives. In addition, a number of officials are engaged in research, training and evaluation work related to the action program. Some are also working at the national and provincial headquarters in policy, planning, budgeting and coordination of the program.

During the third plan (1965-70), the use of various contraceptive methods gradually and steadily increased as is evident from Table 19, which shows that by September 1970 about 3.2 million IUDs had been inserted, 1.15 million sterilizations had been done, and 687.4 million units of conventional contraceptives had been sold. The average performance of all three categories was highest from July 1968 to June 1969. In the case of IUDs, use was 2.76 times higher than in the first year of the program (September 1965-June 1966). The average number of sterilizations was 69.3 times higher, and that of conventional contraceptives was 4.1 times higher as compared with the first year of the program. If the current year is compared to the first year of the program, performance is still 1.5 times higher for IUDs, 29.4 times higher for sterilizations and 3.47 times higher for conventional contraceptives.

Since the Fourth Five-Year Plan has rationalized the field organizational structure and the program targets and has emphasized greatly continuity of use of contraception rather than one-time casual adoption, the performance in the field is stabilizing at a slightly lower level than that of the reported figures for the last month of the Third Five-Year Plan. The quantity of

Table 19

Use of Contraceptive Methods, 1965-70

Year	Intrauterine Devices (IUDs)		Sterilization		Conventional Contraceptives	
	Total	Monthly Average	Total	Monthly Average	Total	Monthly Average
September 1965-June 1966	252,355	25,233.5	5,400	540.0	36,327,567	3,632,756.7
July 1966-June 1967	588,350	49,029.2	48,729	4,060.8	97,153,694	8,096,141.2
July 1967-June 1968	775,955	64,662.9	266,809	2,234.1	164,118,430	13,676,535.8
July 1968-June 1969	836,308	69,692.3	449,435	37,452.9	181,555,023	15,129,585.3
July 1969-June 1970	617,078	51,423.2	327,986	27,332.2	170,408,783	14,200,731.9
July-September 1970	113,632	37,877.3	47,668	15,889.3	37,807,330	12,602,443.3
Total	3,183,678	52,191.4	1,146,027	18,787.3	687,370,827	11,268,374.2

oral contraceptives used in the country is not actually known, since the pills are sold primarily on the open market. Only a small supply is placed on consignment in a number of family planning clinics, which report current monthly sales on the order of 20,000 cycles. Unofficial estimates of sales through private doctors, dispensaries and other outlets range upward from 50,000 cycles per month.

Problems ahead and special issues

The accomplishments of the program during the third plan represent only the initial phase of a complex process of behavioral change--the phase of awareness, initiation and trial. The success achieved in this phase is by no means an assurance of future progress, since awareness, even if universal, may not result in the practice of contraception. Practice, even if extensive, may be erratic, irregular and hence ineffective. The numbers of successful participants may reach a plateau once the "already persuaded" or the "easily persuaded" are in the program. Therefore, taking the program into the next phase is not merely a question of augmenting resources and expanding the scale of activities. It involves a shift in emphases, a reshaping of policies, structures, techniques and procedures for providing family planning care as a regular and continuous service to a growing clientele, rather than as a one-time exposure to contraceptive technology.

The primary emphasis during the third plan was on building up a large infrastructure, on a mass publicity campaign and on fast enlistment of a clientele for clinical methods, particularly the IUD. The program is now entering a new phase of consolidation, aiming not only at introducing family planning to couples but also at ensuring that contraception, once adopted by a family, is regularly practiced and is not given up because of real or supposed difficulties. The "early adopters" were no doubt "easy adopters" and to convert the relatively more resistant groups requires improved

motivational techniques, better quality in clinical services, in counseling and in follow-up, closer supervision, more refined evaluative procedures for studying barriers, problems and client performance. and above all better trained and more competent staff, particularly at the lower levels. Some of the major changes in strategy and structure made to meet these challenges are discussed below.

Field workers: The effectiveness of the front-line worker, who establishes and maintains contact with the client, is a critical factor in the program's success. During the third plan this pivotal role was usually performed by illiterate village women, paid a small part-time fee, less than half of whom also served as local midwives. The UN-WHO Mission, while appreciating the initial usefulness of these women to the program as carriers of the family planning message, expressed doubts about their capacity to provide counseling and follow-up care on the level needed to build up client participation on a long-term basis. It was felt that the program needed trained, full-time field workers who should be able to elicit wider interest and participation in family planning, ensure continuous and effective use of contraception, comply with instructions faithfully and intelligently and keep a systematic record, not only of the client's particulars and their own performance but also of the vital events in the client's family. Such a cadre has been created to a limited extent in project districts in East and West Pakistan and includes both men and women, since decision making on family planning often rests with the husband.

Distribution of staff: Another organizational change was placement of supervisory field staff on the basis of population. A uniform scale of deployment for all the provinces (one family planning officer for 60,000 to 75,000 population or six union councils/union committees/town committees) has been proposed, which will bring the number of family planning officers

in the provinces to 763 in East Pakistan, 515 in Punjab, 173 in Sind, 94 in N.W.F.P. and six in Baluchistan. In East Pakistan, one clerical assistant and one peon are provided to each family planning officer.

Documentation: Besides monthly district returns, a system of documentation which is under trial in several districts has been developed, including a register of all "eligible" couples residing in a village or urban area with basic demographic particulars and a longitudinal contraceptive history for each showing response to motivation, acceptance of a method, follow-up action and a yearly record of failure (that is, birth). This information will be fed into a central statistical system for analysis.

Incentives: At present, incentives paid to workers are tied to acceptance of certain clinical methods, a system which has several disadvantages. Post-acceptance care, being less profitable than recruitment of new cases, is often neglected. No attempt is made to ensure that the client switches over to another method if the first is found difficult or unacceptable. Methods that do not carry a high reward for the worker, but may be preferred by clients, are de-emphasized in the promotional effort. Possibilities of collusion and false reporting are ever present.

In the new system, a substantial bonus over the basic wage will be paid to the field worker after verification that the client has remained infertile over a period of time and the amount of bonus will increase with the period of infertility, irrespective of the method chosen by the client. The insertion fee for IUDs payable to paramedical workers has been raised, but half of it would be payable after a year, if the client retains the IUD and remains nonpregnant.

Performance-audit: Performance reports on acceptors who do not meet with a failure (in the form of a birth) for a year or longer will be verified by the immediately supervising family planning officer, who will control six field teams. Verification by the family planning officer will be cross-checked

by a program auditor assisted by a woman worker who is independent of the local program administration. It is proposed to attach one program auditor to every 36 teams. Sample checking will also be carried out by the higher inspection structures in the region, province and the center. Such a rigorous system of performance audit should eliminate all possibility of misreporting, particularly when full ground information is available to facilitate the location of clients.

Training: Training was identified as a relatively weak aspect of the program by the UN-WHO Mission, with substantial room for improvement. Training nuclei were not sufficient in number, and training content filtered through several layers before it reached field workers at the bottom. For the training of field workers, one training officer has been appointed for pre-service and continuous inservice training for every group of 36 field teams. These officers, numbering about 300, are being trained at the regional and provincial centers. At the same time, regional and provincial training institutions, originally designed for training only clinical personnel, have been strengthened to provide for training in educational techniques and communication processes. The intention is to broaden the field of "training-in-action," requiring the instructor to demonstrate the application of basic principles in a field situation rather than merely to enunciate them in a classroom. The content of training programs is constantly enriched from several sources: field experience, insights of research in the local context, findings of evaluators and observations of media experts.

Clinical facilities: Clinical facilities will be expanded to two and a half times those available during the last year of the third plan by training and employing 1,800 paramedical workers. The training content for paramedical staff has been broadened to include instructions on nutrition, maternal health and child care in order to enable workers to serve as family health educators, without losing emphasis on their primary responsibilities in family planning.

The construction program for clinics is being coordinated with the program in the health sector to avoid duplication of investment.

Forty postpartum centers will be established, each costing not more than 12,000 rupees a year. The high percentage (34 percent) of postpartum acceptances justifies an emphasis in this area. To get maximum benefit from this program, the primary technique will be tubal ligation. Training in simpler methods of tubal ligation requiring a minimum stay in the hospital is already in progress.

Mass media: The first phase in publicity was one of creating an awareness that family planning is desirable and possible. Now the need is for imparting more detailed information on the "how" of family planning, on the different choices available and on what to expect from each possibility. Tape-recorded programs played to small village audiences by field workers will give much more detailed and standardized information to the audience, many of whom are illiterate, than can be done through the written word. At least twenty films per year are planned during the period 1970-75. Other forms of publicity will also continue, primarily for provoking discussion and creating conditions for fruitful interpersonal communication.

Methods of contraception: No program can afford to be rigidly bound to any specific method of contraception, for this would mean losing the clientele who want contraception but cannot or will not accept a particular technique. The object of a family planning program is to promote contraception as such, not to promote devices or drugs. Targets must, therefore, be constantly re-evaluated on the basis of previous performance, future prospects, changing preferences and varying resources. However, adjustments that are made should take into account the demographic impact of shifts in emphasis.

The third plan program had in the initial phase singled out the IUD as the most suitable method because of its low cost and relative permanency.

However, every woman cannot retain an IUD because of involuntary expulsion or severe side effects. Therefore, the IUD target for new acceptors has been progressively reduced from the achievement in 1969. Efforts will now concentrate on improving the retention rate for the device through better counseling, follow-up and reinsertions.

The vasectomy "boom" in East Pakistan perhaps cannot last very long. However, the oral pill's future seems bright as judged from market sales, preference studies and a continuation rate of 64 percent reported from a study in a rural area in East Pakistan. Use of conventional contraceptives (the condom and spermicides) has doubled. Under the new method of registration and follow-up, it would be possible to insure a high use-effectiveness for these methods, particularly when used in combination.

Reporting: Regular reports of expenditures, inventory and distribution of supplies, performance and personnel position and characteristics of IUD acceptors are submitted by the district family planning boards. These reports are checked at the national level and a comprehensive monthly report is prepared and submitted to the government. A built-in system of checks, cross-checks and counterchecks exists at all levels through periodic inspection by internal and external agencies.

Research and evaluation: Family planning research continued to remain fragmented into several organizations during the third plan. The need to group these scattered efforts into a single structure, at least one in each of the two wings of the country, became apparent towards the end of the third plan. Accordingly, with the advent of the Fourth Five-Year Plan (1970-75) in July 1970, training, research and evaluation centers (TRECs)--one each at Dacca and Lahore--were established after merging the central evaluation units, the Johns Hopkins University - University of California Research and Evaluation

Centers and the Swedish-Pakistan Family Welfare Project. These integrated structures (TRECs), which will constantly be strengthened by qualified and experienced professionals, have been designed to encompass research, training and communication media and will plan, direct and coordinate training at all levels, prepare training materials, establish evaluation criteria, prepare instructors and instruct senior program personnel in program administration, surgical clinical skills and effective methods of behavioral change.

Training, research and evaluation centers are being developed so that one section of the center will work on improving the effectiveness of the program, often by setting up and testing models in an experimental area, while the other part will periodically measure the impact of the action program as a whole in terms of attitude and behavioral changes relative to family planning methods and practices.

As is evident from its nomenclature, the training, research and evaluation center and each of its sections has a threefold responsibility--training, research and evaluation--related to the action program. Accordingly, each of its sections would train the family planning personnel, evaluate the training/orientation program and conduct post-training evaluation of the performance of the personnel by research studies and field experimentation projects. Since the training, research and evaluation centers are technical limbs of the action program, the legitimate focus of their activities is to improve the performance of program personnel by increasing their knowledge and skills, to discover through research and experimental studies new and better techniques and program contents for the furtherance of the objectives of the action program and periodically to evaluate the techniques and the program content.

As "trouble shooters" the training, research and evaluation centers would also be responsible for investigating the special problems referred to them

by the action program in a particular geographic unit of operation, and/or any general problem faced by the program as a whole with a view to advising the implementing agencies.

The training, research and evaluation centers would cooperate and coordinate their activities with those individuals and institutions engaged in similar work and would give advice and assistance to the regional family planning training centers as well. They would attempt to develop, through research and evaluation, communications materials for teaching purposes and for wider use in the program.

All the sections of the training, research and evaluation centers are interdependent, and their work is coordinated by the director. While being equipped to give advice on technical matters, these sections are also required to keep abreast of developments in the field by maintaining close liaison with other professional organizations both within and outside the country.

In the main, training, research and evaluation centers through their work will ultimately help to operate the action program in terms of better qualified people, the most effective approaches and the best possible program contents.

Besides the National Research Institute of Fertility Control and the training, research and evaluation centers in East and West Pakistan, research is also carried on by a number of organizations such as the sociology and social work departments of the universities, the Family Planning Association and its affiliates. The research activities in the country are coordinated by the Pakistan Family Planning Council.

Evaluation is an integral part of the program operation. For maintaining objectivity, independence and validity, the central inspection directorates--one in each wing of the country--and the training, research and evaluation centers in East and West Pakistan, which undertake program audits at different

points in time, function under the central council, while the implementation of the program is the responsibility of the provinces. The responsibility to coordinate the work relating to evaluation of the action program and to undertake special analysis is carried out by the evaluation section of the council.

The family planning program has received generous and valuable assistance in commodities and advisory services from the governments of the United States, Sweden, the Netherlands and from international agencies such as UNICEF, the Ford Foundation, the International Planned Parenthood Federation, the Population Council and other bodies. It is hoped that many other countries and international agencies will provide such assistance in commodities and resources as they may be in a position to contribute.

SUMMARY AND CONCLUSIONS

The government of Pakistan is firmly committed to a vigorous program in family planning and a national policy of fertility limitation. The more than doubled expansion that has been made in financial resources does not represent the upper limit of expenditure. If avenues of investment capable of yielding adequate returns in population control open up, it may be possible to go beyond this figure. However, an equally important concern is the assurance that a higher level of investment does in fact lead to a reduction in fertility, rapidly and substantially. Paradoxically, the need for large investment will diminish as consciousness of the population problem becomes more pervasive among the taxpayers and their representatives.

The fourth plan will be a period of expanded and intensified efforts. The administrative structure that has been emerging in the current plan period is designed to approach all fertile couples in the country, to maintain regular

and continued contact with them and to report systematically on the outcome of each such contact. It is hoped that such a structure would dissipate the uncertainties that surround the efficacy and genuineness of the family planning effort and the impact on the population situation.

From the foregoing brief résumé of Pakistan's population problem, of the steps taken to overcome it and of their results, it may be concluded that the program objective will be achieved. Inhibitions and taboos are fast melting; use of contraception and family planning are gradually being assimilated by the national value system, and soon a small family will become a norm of life.

REFERENCES

1. Census of Pakistan, Vol. I (Pakistan: Government of Pakistan).

2. Outline of the Fourth Five-Year Plan (1970-75) (Pakistan: Pakistan Planning Commission).

3. 20 Years of Pakistan in Statistics (Pakistan: Central Statistical Office) and Outline of the Third Five-Year Plan (Pakistan: Pakistan Planning Commission).

4. 20 Years of Pakistan in Statistics.

5. Births, Deaths and Marriage Registration System in East Pakistan (Mimeographed; Dacca: Government of East Pakistan Bureau of Statistics, 1966); Elizabeth Gustafson, Existing Birth and Death Registration Systems in East and West Pakistan: Summary Report (Karachi: Central Statistical Office Population Growth Estimation, 1964); Report of the Population Growth Estimation, 1962-63 (Pakistan Institute of Development Economics, 1968); and Present System of Registration of Vital Events in Pakistan: Its Deficiencies and Some Measures of Improvement (Mimeographed; Karachi: Government of Pakistan Central Statistical Office, 1966).

6. Census of Pakistan Housing, 1960, Vol. 8 (Pakistan: Government of Pakistan, 1963).

7. Ibid.

8. C. Chandrasekaran and W. Edwards Deming, "On a Method of Estimating Birth and Death Rates and the Extent of Registration," Journal of American Statistical Association, Vol. 44 (1949).

9. Report of the Population Growth Estimation, 1962-63 and William Seltzer, Benchmark Demographic Data for Pakistan: A Review of Summary Estimates Derived from PGE (Experiment Research Report No. 66; Karachi: Institute of Development Economics).

10. Karol J. Krotki, "Population Size, Growth and Age Distribution: Fourth Release from the 1961 Census of Pakistan," Pakistan Development Review, Vol. 3 (1963).

11. Methods for Population Projection by Sex and Age (New York: United Nations, 1965).

12. C. Warren Robinson, Recent Mortality Trends in Pakistan (Karachi: Pakistan Institute of Development Economics).

13. A.S.M. Mohiuddin Ahmad, The Population of Pakistan, Past and Present (University Microfilms, Inc., 1963).

14. Final Report (India: Government of India Famine Inquiry Commission, 1945).

15. F. Yousuf, "Abridged Life Table for Pakistan and Its Provinces, 1960-64," Proceedings of the IUSSP Conference (Sydney, Australia, 1967), pp. 533-41.

16. Ibid.

17. Ibid.

18. "21 Die of T.B. Every Two Hours," Dawn (Karachi), March 17, 1964.

19. M.K.H. Khan, "Levels and Trends in Mortality in West Pakistan," Proceedings of the Pakistan Statistical Association (1959-60), Vol. 1.

20. C. Warren Robinson.

21. Third Five-Year Plan (1965-1970) (Karachi: Government of Pakistan Planning Commission, 1966).

22. A.M. Parvez et al., "Hospital Mortality Pattern in Jinnah Post-Graduate Medical Centre," Pakistan Journal of Medical Research, Vol. 8 (1969), p. 308.

23. Fourth Five-Year Plan (1970-75) (Karachi: Government of Pakistan).

24. Third Five-Year Plan.

25. The System of Local Health Services in Rural Pakistan, 1969.

26. Third Five-Year Plan and Fourth Five-Year Plan.

27. First Five-Year Plan (1955-60) (Karachi: Government of Pakistan Planning Commission).

28. Second Five-Year Plan (1960-65) (Karachi: Government of Pakistan Planning Commission).

29. Third Five-Year Plan.

30. The data obtained through the Impact Survey are being processed and analyzed.

31. Inventory of Family Planning Research in Pakistan, (Karachi: National Research Institute of Family Planning, 1967), p. 129.

32. Inventory of Family Planning Research in Pakistan, (Karachi: National Research Institute of Family Planning, 1969), p. 135.

33. N. Sadik, "Population Problems in Pakistan: Programs and Policies," in Population Dynamics: International Action and Training Programs, ed. Minoru Muramatsu and Paul A. Harper (Baltimore: The Johns Hopkins Press, 1965), pp. 27-34.

34. Family Planning Scheme for the Fourth Five-Year Plan (1970-75) (Karachi: Government of Pakistan Family Planning Division), p. 4.

35. Enwar Adil, "Measurement of Family Planning Progress in Pakistan," Demography, Vol. 3 (1968), p. 600.

36. Family Planning Scheme for the Fourth Five-Year Plan, p. 4.

37. Ibid.

38. Family Planning Scheme for the Third Five-Year Plan (1965-70) (Karachi: Government of Pakistan Family Planning Division), p. 18.

39. Ibid., p. 60.

POPULATION AND HEALTH PROBLEMS AND PROSPECTS IN TURKEY

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A COUNTRY OVERVIEW

Physical characteristics

Location and land area: Turkey, with a surface area of 780,576 square kilometers or 301,380 square miles and a prominently mountainous terrain, forms a bridge between the Balkans and the Middle East. The Bosporus, the Sea of Marmara and the Dardanelles divide Turkey into two parts: the section on the European continent is called Thrace, and that in Asia is called Anatolia. Elevation averages 1,000 meters in central Anatolia and reaches an average of 3,000 meters in predominantly mountainous eastern Anatolia. Plains stretch out among the mountain ranges.[1]

Climate: Turkey's climate varies from region to region. Snowfall is extremely rare on the western and southern coastal lines. On the other hand, a great many of the provinces in northeastern Anatolia remain blanketed with snow for at least three months yearly. The minimum average annual rainfall is 31.5 centimeters, and the maximum is 241.6 centimeters. Average temperatures range from -0.2°C in January to 23.2°C in July.[2]

Population

According to the 1970 census results, Turkey has a population of 35,666,549.[3] The average population density per square kilometer in

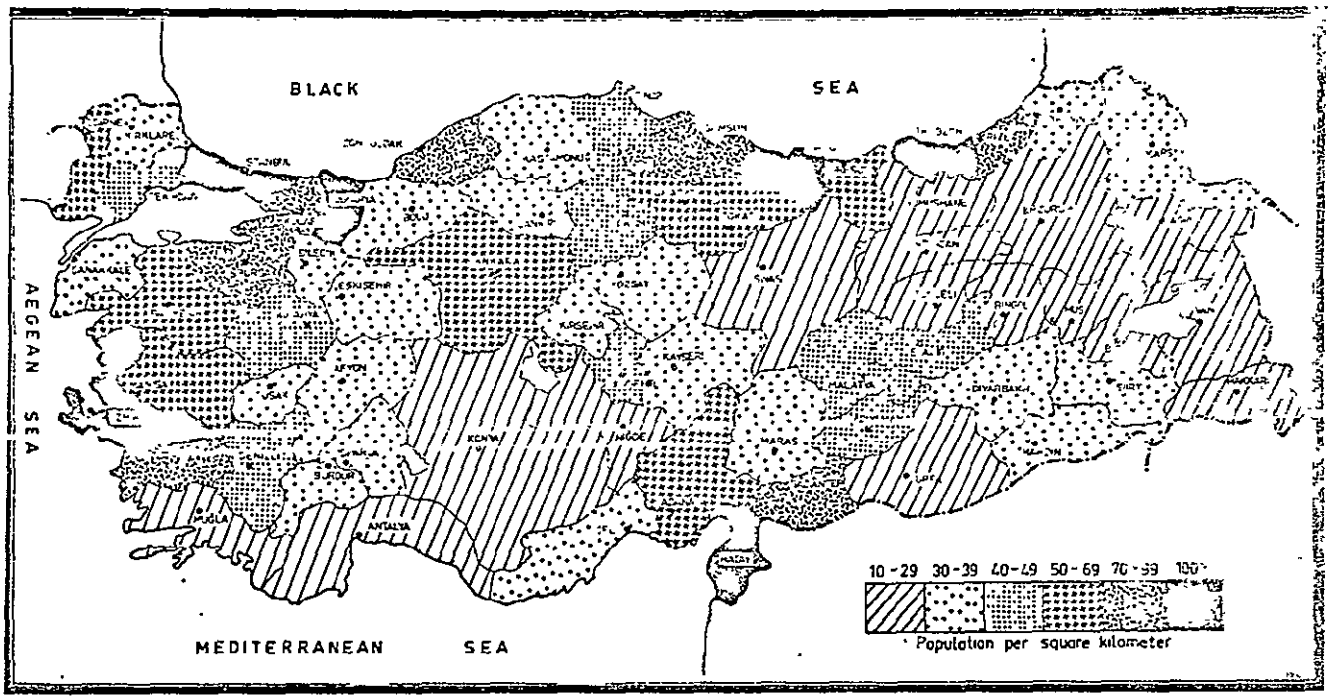
Turkey is 46 persons, or 118 persons per square mile. It is fairly obvious, however, that these average regional figures fall short of providing an accurate description of the situation in Turkey. Population density varies greatly from province to province, as Figure 1 shows. For example, the number of persons per square kilometer is 11 in Hakkâri and 524 in Istanbul. The average surface area per rural community is 21.6 square kilometers, and the average distance between neighboring communities is 9.2 kilometers. Although houses are clustered in most of the villages, dwellings are quite scattered in some mountainous regions such as the Black Sea coastal region.

Political history

The history of the Turks in Anatolia goes back to the eleventh century when a wave of migration of Turkish tribes from central Asia towards Anatolia began. This migration was led and protected by the Turkish sultans of the Selçuk dynasty. The crucial war which determined the fate of Anatolia was fought between Alpaslan, the Turkish sultan, and Romanos Diogenes, the Byzantine emperor, in 1071. The war ended with a victory for Alpaslan, and Anatolia was opened to the Turkish migrants. Thus small Turkish feudal states subject to the sultans of the Selçuk dynasty came into being in Anatolia.

In the thirteenth century, the sultans of the Selçuk dynasty lost their power because of internal problems and the external pressure of the descendants of Genghiz Khan. At that time, Osman bey, who is known as the first ruler of the Ottoman dynasty, was one of the feudal lords in Anatolia. He and his immediate descendants conquered the remaining parts of the Byzantine Empire, subdued the other Turkish feudal lords, captured Istanbul and opened the Balkans to the Turkish migrants. The Ottoman Empire, established by the Turks under the rule of the Osman (Ottoman) dynasty reached its peak in the sixteenth century.[4]

Figure 1: Population Density in Turkey in 1970


BLACK SEA
AEGEAN SEA
MEDITERRANEAN SEA
10 - 29
30 - 39
40 - 49
50 - 69
70 - 99
100 +
Population per square kilometer

The failure of the second siege of Vienna in 1682 was the turning point in the history of the empire. The Turks fought many wars between 1682 and 1918 and steadily lost their territories to other nations. At the end of the First World War, Anatolia was the only unoccupied part of the empire. The last sultan of the Ottoman dynasty signed a treaty with the Allies in 1919 which left the Allies not only the Arab countries but also a large part of Anatolia. The Turks in Anatolia resisted the occupation of their land and a guerrilla war began under the leadership of Mustafa Kemal (later called Atatürk). The war between the Turks and the Allies ended with a Turkish victory in 1922. The Turkish Parliament decided to terminate the rule of the Ottoman dynasty and established the Turkish Republic in 1923. The Turkish government signed a peace treaty with the Allies in 1924.[5]

The Turks living in Turkey today are racially and culturally different from the peoples of the neighboring countries and from the Turks living in Iran and the U.S.S.R. Racially, Turks are Caucasians, and their language is in the Ural-Altaic group, as are Finnish and Hungarian. Those living in Anatolia today are a mixture of the Turks who came from central Asia, the people living in Anatolia before Turkish settlement and the Turks who migrated back to Anatolia from the Balkan countries. The last group had lived in the Balkans for five centuries and had mixed with the native peoples of the Balkans.

Contemporary Turkish culture, derived from the original Turkish culture of central Asia, is influenced by Islamic culture, the local cultures of Anatolia and the Balkans and more recently, by the culture of Western Europe.

The Ottoman Empire was the most developed state of the world in the

fifteenth century. For three centuries, Turkish rulers and intelligentsia failed to appreciate the importance of the Renaissance and of industrialization in Europe. The need for reformation, which has been called "westernization," was felt in the early nineteenth century, and the first official document calling for reform was the "Gülhane Edit" of the sultan in 1839. Eighty-four years were spent in halfhearted attempts at westernization. Atatürk, who was elected the first president of the Turkish Republic in 1923, succeeded in a short time in realizing many reforms, including some which had not even been contemplated before. Under his leadership secularization was emphasized, and Turkey became the first country having an absolute majority Muslim population (99.2 percent) with a secular administration. The Parliament adopted the Latin alphabet, gave women equal social status with men, did away with scholastic education and adopted new criminal and civil laws, similar to those in western countries.

Turkey, a country of the Middle East, is today one of the members of the European Council, which is open only to European communities having governments under the control of freely elected parliaments.

SOCIAL AND ECONOMIC SITUATION

Economic history

Agricultural reform: Until the second half of the nineteenth century, the right to own land in the Ottoman Empire rested with the sultans. The sultans, however, granted their subjects limited rights to cultivate these lands until a land edict in 1858 granted private ownership. Yet a land distribution policy has never been promulgated, so forms of land ownership in Turkey vary from region to region. Landlords own quite large pieces of

land in some parts of the country, while small proprietorship is dominant in other regions.

Two studies, the first in 1963 and the second in 1968, showed an inadequate distribution of land among families.[6] For example, the peasant families having no land and those having less than 50 acres were 17.5 percent and 64.3 percent of the rural families, respectively, according to the 1968 survey. The total land which they owned was 34.3 percent of the cultivable land. The above figures in the 1963 survey were 9.1, 60.3 and 27.9 percent, respectively.

Agrarian reform in Turkey is one of the most debated subjects at present. Attempts during the last decades to implement a policy of land reform were unsuccessful. At present, a new agrarian land reform bill is being deliberated in the Parliament. The equitable distribution of land is being considered simultaneously with land irrigation and fertilization, the mechanization of agriculture and the development of industry to promote agricultural production.

Mechanization in agriculture has been rapid. The number of machines in the country showed a 208 percent increase in the ten years from 1960 to 1970 as follows: tractors increased from 3,160 in 1960 to 7,940 in 1970; binders, from 3,824 to 3,990; combines, from 5,846 to 8,568 and threshers, from 3,803 to 14,044.

Major crops and yields in 1970 were cereals (15.9 million tons) and vegetables (8.4 million tons). Fruits and milk were also important products. Agricultural products with smaller yields for that year included industrial crops, oil seeds, tuber crops and eggs.[7]

Industrialization: The First Five-Year Development Plan in which high priority was given to industrialization was accepted by the Parliament in 1962. Industry's contribution to the national income in terms of constant

prices increased from 8.1 billion T.L.* in 1962 to 15.9 billion T.L. in 1970.[8] The rate of increase in the industrial sector was 4.8 times higher than in the agricultural sector for the same period.

A study of mining production figures for 1968 in Turkey reveals that the bulk of production came from hard coal (7.5 million tons), lignite (8.1 million tons), iron (2.2 million tons) and crude petroleum (3.1 million tons). Industrial production in 1967 showed forestry, cement and machinery as the major industries.[9] Plants for manufacturing machines, agricultural equipment, electrical and electronic appliances and equipment, for assembling cars and railroad transports and shipyards are growing rapidly.

Urbanization: Cities and towns are growing rapidly in Turkey (see section on population composition). A recent survey on in-migrants in cities showed that migration toward urban areas is due mostly to pushing factors such as unemployment problems in rural areas. Pulling factors such as opportunities for a better social life and education for children also play a role in urbanization. The rate of urbanization is much higher than the possibilities of building proper housing and extending municipal services to newly established quarters. Squatter sections are therefore growing rapidly, especially in metropolitan areas; for example, about half the population in the three largest cities in Turkey live as squatters.

Changes in the Gross National Product (GNP)

The net national product at market prices was 124.4 billion T.L. in Turkey in 1970. It has shown an increase 14 times during the last 22 years. The average annual increase of net national product at factor cost prices was 7.5 during the last decade.

* T.L. = Turkish Lira; 14 T.L. = $1.00

The gross national product at market prices in 1970 was 147.9 billion T.L., distributed among the various sectors as follows: agriculture, 25.9 percent of the GNP; industry, 15.5 percent; government service, 8.8 percent; trade, 7.3 percent; construction, 6.3 percent; and other sectors, 36.2 percent.[10]

According to the estimates of the State Institute of Statistics, annual per capita income was 3,488 T.L. (equivalent to $249) in 1970.[11] Studies on Turkey's national income have shown disparities in distribution. According to the results of the 1968 Survey on Family Structure and Population Problems, 90 percent of the population receive 55 percent of the national income and the upper ten percent receive 45 percent, as shown in Table 1. The average annual family income in rural areas is 8,181 T.L., which increases as the size of the community increases and reaches 26,470 T.L. in the metropolitan areas. Regional differences in the average income of families are not great but the distribution of income is more inequitable in eastern Anatolia than in western Anatolia, while central Anatolia holds a position midway between these two extremes.[12]

Employment

Underemployment in the agricultural sector is a serious problem in Turkey. The number of underemployed males is estimated to vary between 850,000 and 1,280,000.[13] Unemployment in the nonagricultural sector is becoming more serious every year in spite of the yearly emigration of approximately 100,000 workers to Europe. It is estimated that the number of unemployed persons increased from 340,000 in 1967 to 800,000 in 1971. Another important problem related to employment is the shortage of skilled workers. The demand of growing industries for qualified workers has never been met satisfactorily.

Table 1

Annual Income Distribution, 1968

Income Groups	Percent of Households	Percent of the National Income
0-2,500 T.L.	19.4	2.8
2,501-5,000 T.L.	22.9	7.7
5,001-10,000 T.L.	27.4	17.9
10,001-25,000 T.L.	21.2	28.5
25,001-50,000 T.L.	6.6	19.6
50,001+ T.L.	2.5	23.5

Source: Türkiye'de Gelir Dağılımı.

Role of Women

Women in the Turkish tribes and states had equal status and rights with men before migrating to Anatolia. They gradually lost their equality, however, and became dependent on their husbands. One of Atatürk's greatest reforms was to restore equal rights to women. At present, no legal inequality or restrictions exist for women. All the professions and working places are open to men and women equally and both sexes have the same civil rights. Many women serve as judges--including supreme court judges--attorneys, doctors, engineers and professors. Women also have full political equality with men; they vote and have the right to be elected to office. There are women Parliament members and women majors.

According to the 1965 census results, 38 percent of the economically active population were women. Ninety-four percent of the female labor force was engaged in agriculture. The male-female ratio was 108 in nonagricultural occupations. Half of the women in nonagricultural occupations were artisans, craftsmen and production process workers. Technical, professional and related fields ranked second, with 20.3 percent of the working women, and managerial, administrative and clerical workers ranked third, with 15.0 percent.[14] (See Table 2.)

A study of family structure in Turkey revealed that the most universal trait in all types of Turkish families is the subordination of women. The power structure in the family and family modernity, however, are highly associated with family type and, to a lesser extent, with urban-rural residence. In both urban and rural areas, the patriarchally extended households are the most traditional; nuclear families are the least traditional. In the nuclear families (59 percent of all families) the husband-wife relationship is relatively more egalitarian since the wife also participates in decision making.

Table 2
Nonagricultural Population by Occupation

Occupation	Percent of Total Labor Force	Percent of Working Women
Artisans, craftsmen and production process workers	14.5	50.0
Technical, professional and related workers	20.7	20.3
Managerial, administrative and clerical workers	11.9	15.0
Service workers	8.3	11.4
Salesmen and related workers	1.3	1.7
Workers in transport and communications occupations	1.2	1.1
Unidentified	0.3	0.5
Total	100.0	100.0

Source: 1965 Population Census (State Institute of Statistics, Publication No. 508).

Education

Primary importance has been attached to education ever since the establishment of the Turkish Republic. The main policy adopted by the government has been free education from primary school up to and through the university. However, the government has not been able to cope with the steadily increasing demand for education in general, and for university education in particular, and so private educational institutions have emerged over the past few years. The number of schools, school teachers, students and graduates in 1968 can be seen in Table 3.[15]

If an increase in the rate of literacy can be accepted as an indication of educational development, it must be conceded that Turkey is developing at a fairly rapid pace. Whereas only 4.6 percent of the women and 17.4 percent of the men were literate in the age group of six years and above in 1927, this proportion increased to 40 percent for women and 70 percent for men in 1970 (as shown in Figure 2).[16]

The literacy rate is higher for the younger generations--63 percent for females and 85 percent for males between ten and 29 years of age in 1970. Thus one can conclude that the rate of literacy, especially for those in the reproductive age group, will continue to increase rapidly in the coming years.

DEMOGRAPHIC SITUATION

Population growth

The various population censuses from 1927 to the present provide adequate data on fluctuations in the growth rate of the Turkish population. As can be seen in Table 4, the annual growth rate of the population has risen greatly since 1950. Whereas the average growth rate of the popula-

Table 3

Number of Schools, Teachers, Students and Graduates, 1966-67

Type of School	Sector	Number of Schools	Number of Teachers	Number of Students	Number of Graduates
Primary	Public	32,226	95,421	4,189,818	536,898
	Private	166	1,481	25,272	4,128
	Total	32,392	96,902	4,215,090	541,026
Secondary	Public	1,168	19,571	589,322	103,880
	Private	186	3,815	36,334	8,390
	Total	1,354	23,386	625,656	122,270
Vocational	Public	808	11,370	188,934	44,411
	Private	16	241	2,164	514
	Total	824	11,611	191,098	44,925
Higher Education	Public	94	5,933	94,572	12,260
	Private	14	272	14,055	638
	Total	108	6,205	108,627	12,898

Source: Education Statistics 1970-71 (in Turkish; Unpublished Statistics of State Institute of Statistics, No. 635).

Figure 2: Percentage of Population Six Years Old and Over Who Were Literate, 1927-70

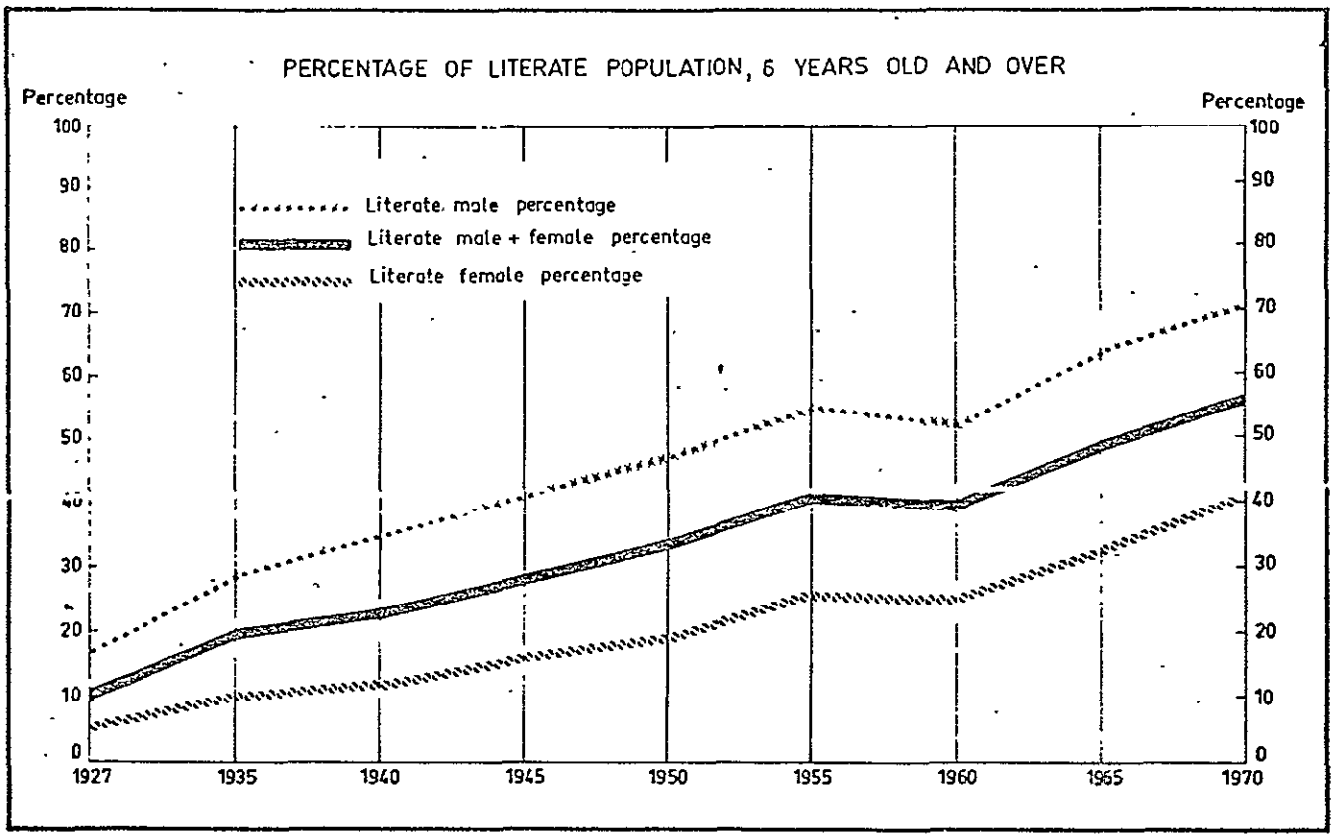

PERCENTAGE OF LITERATE POPULATION, 6 YEARS OLD AND OVER
Percentage
Percentage
100
90
80
70
60
50
40
30
20
10
0
Literate male percentage
Literate male + female percentage
Literate female percentage
1927
1935
1940
1945
1950
1955
1960
1965
1970

Table 4

Population Growth, 1927-70

Year	Population	Population Increase	Average Yearly Increase /1,000 Population
1927	13,648,270	-	-
1935	16,158,018	2,509,748	21.3
1940	17,820,950	1,662,932	19.8
1945	18,790,174	969,224	17.0
1950	20,947,188	2,157,014	22.0
1955	24,064,763	3,117,575	28.1
1960	27,754,820	3,690,057	29.3
1965	31,391,421	3,636,601	24.9
1970	35,666,549	4,275,128	25.5

Source: Temporary Results of the 1970 Population Census (in Turkish; State Institute of Statistics, Publication No. 616).

tion was 18 per thousand in the period prior to 1945, the rate increased to 29.3 per thousand in the 1960 census and was 25.5 per thousand between 1965 and 1970.

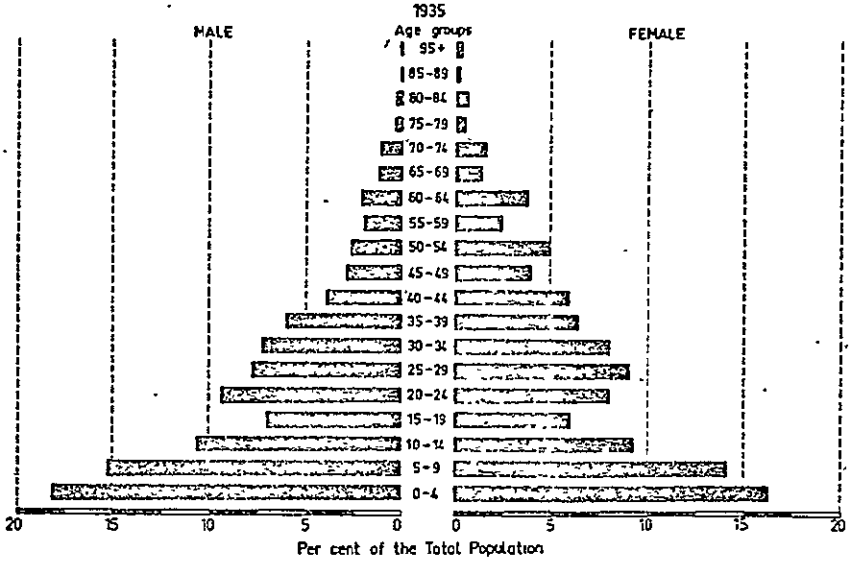
Population composition

Distribution of population according to age groups and sex: According to the 1970 population census results, the population under 14 years of age was 41.8 percent of the total population. It is obvious that Turkey is among the countries with a young population. However, the age distribution of the population has changed slightly since the early 1930s. The 0-4 age group was 17.0 percent of the total population in 1935 and declined to 14.7 percent in 1970, which suggests that Turkey's population, though relatively young, exhibits a tendency of gradually getting older. Age pyramids based on the data supplied by the 1935 and 1970 censuses can be seen in Figure 3.

A visible change has taken place in the sex ratio of the Turkish population over the past 30 years. According to the 1970 census results, the number of females in the total population decreased from 50.9 percent in 1935 to 49.4 percent in 1970. The total number of fertile women is nearly 7.5 million and comprises 21.1 percent of the total population.

Urban-rural distribution: Census data show that in 1945, 81.47 percent of the total population lived in rural areas. In subsequent years this percentage decreased as follows: in 1950, 81.18 percent of the population was rural; in 1955, 77.41 percent; in 1960, 73.99 percent and in 1965, 70.11 percent. According to the 1970 census, 66.55 percent of the population live in rural areas and 18.89 percent live in cities with a population of over 100,000, as illustrated in Figure 4. The above figures indicate that

Figure 3: Population Pyramids, 1935 and 1970


1935
MALE
Age groups
FEMALE
95+
85-89
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
20
15
10
5
0
0
5
10
15
20
Per cent of the Total Population

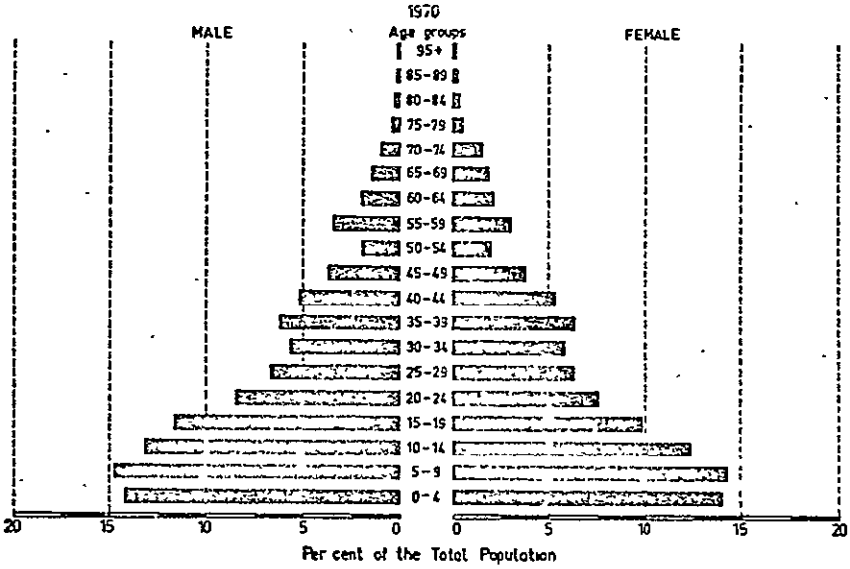
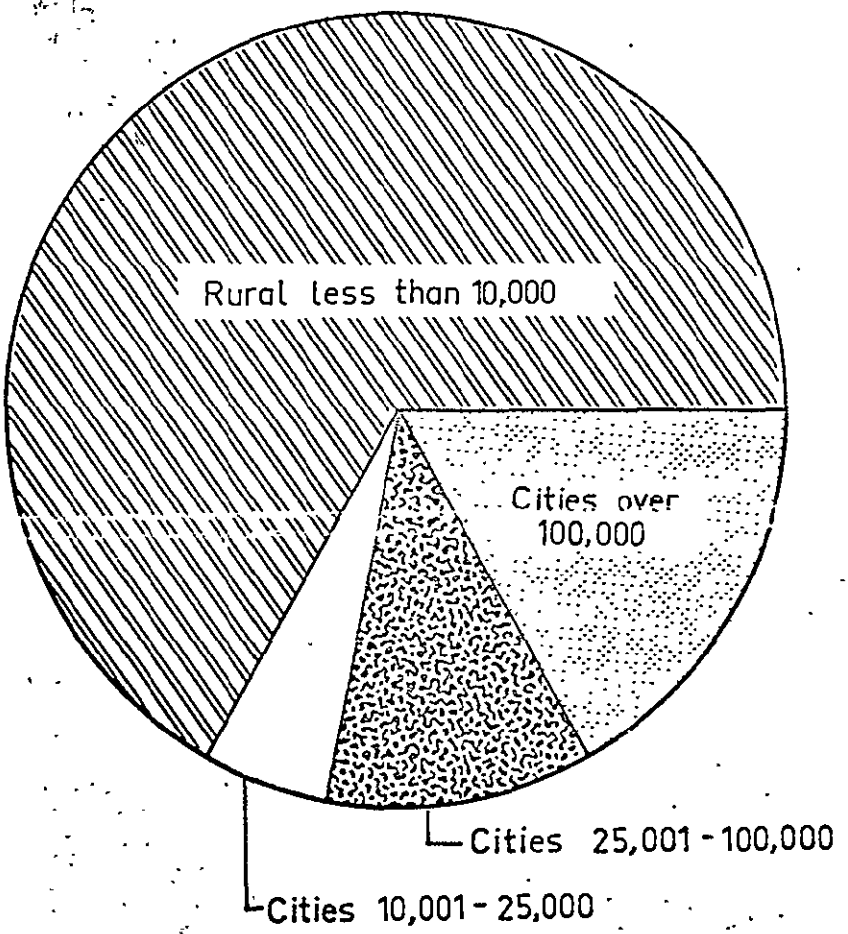

1970
MALE
Age groups
FEMALE
95+
85-89
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
20
15
10
5
0
0
5
10
15
20
Per cent of the Total Population

Figure 4: Urban-Rural Population Distribution


Rural less than 10,000
Cities over 100,000
Cities 25,001 - 100,000
Cities 10,001 - 25,000

urbanization is happening quite rapidly in Turkey. The urban population increased 4.43 times during the last 25 years, whereas the rural population increased 1.55 times during the same period. Urbanization is not limited to only a few cities. The number of cities having more than 100,000 population increased from four in 1945 to 20 in 1970, and the number of urban communities from 96 to 232.[17]

In 1965, 22.5 million of the population lived in a total of 34,041 rural communities, which were characterized by small size. For example, the number of rural settlements with 251-500 inhabitants was 13,226. Those with a population of 501-1,000 numbered 8,447, and very small villages of 151-250 people each accounted for 5,326 of the total.[18]

Other characteristics: The productive population in Turkey is 15.7 million, that is, 44 percent of the total population in 1970. Of this population, 87 percent are 15 to 64 years of age, eight percent are children between 12 and 14 years of age, and five percent are over 65 years of age. Of the economically active population, 64 percent are in the agricultural sector; 66 percent of these are family workers. The wage earning workers comprise four percent of those in the agricultural sector. If family laborers are excluded, half of the economically active population are employed on a salary or wage basis and the other half are employers or self-employed persons.[19]

Vital rates

Birth and fertility rates: The information available on the birth and death rates in Turkey is based on the differences between consecutive censuses and the results of several sampling surveys.

Using census data, Shorter estimated the birth rate in Turkey to be 44 births per thousand population between 1955 and 1965.[20] The birth rates vary greatly from province to province. The extremes were over 60 births

per thousand in six provinces in eastern Anatolia with a maximum of 66 per thousand in Hakkâri and less than 35 per thousand in ten provinces in western Anatolia with a minimum of 23 per thousand in Istanbul.

According to the Turkish Demographic Survey results, the annual adjusted birth rate in Turkey was 40 births per thousand population for the period 1966-67. The crude birth rate was estimated to be 48.5 per thousand in eastern Anatolia, an estimate which falls short of actuality. Based on census results, the crude birth rate for eastern Anatolia was estimated to be about 55 per thousand. If the rate for Turkey is corrected accordingly, it becomes 41 per thousand.[21] Urban-rural differences in crude birth and death rates are shown in Figure 5.

Death rates: The adjusted crude death rate in Turkey was 14.6 deaths per 1,000 population in 1966-67. The rate shows regional and urban-rural variations which were between 8.9 and 12.2 per 1,000 for urban areas and between 13.2 and 21.7 for rural areas.[22] (See Table 5.) Figure 5 shows more clearly the urban-rural differential in crude birth and crude death rates.

Data needed to demonstrate the trend of change in mortality are available only for provincial centers. The crude death rate increased from 17.9 deaths per thousand population in 1935 to 20.1 per thousand in 1940, and then decreased steadily, dropping to 7.5 per thousand in 1970 (see Figure 6).[23]

The infant mortality rate in Turkey was 153.0 deaths per thousand live births in 1966-67. The range of variation in infant mortality was between 108.8 and 148.6 deaths per thousand live births for urban areas and between 130.4 and 214.7 for rural areas. Nationwide figures for maternal mortality are not available, although in 1970 the estimate was 5.9 deaths per 10,000 live births for provincial centers.[24]

Figure 5. Birth and Death Rates for Urban and Rural Areas, 1966 and 1967

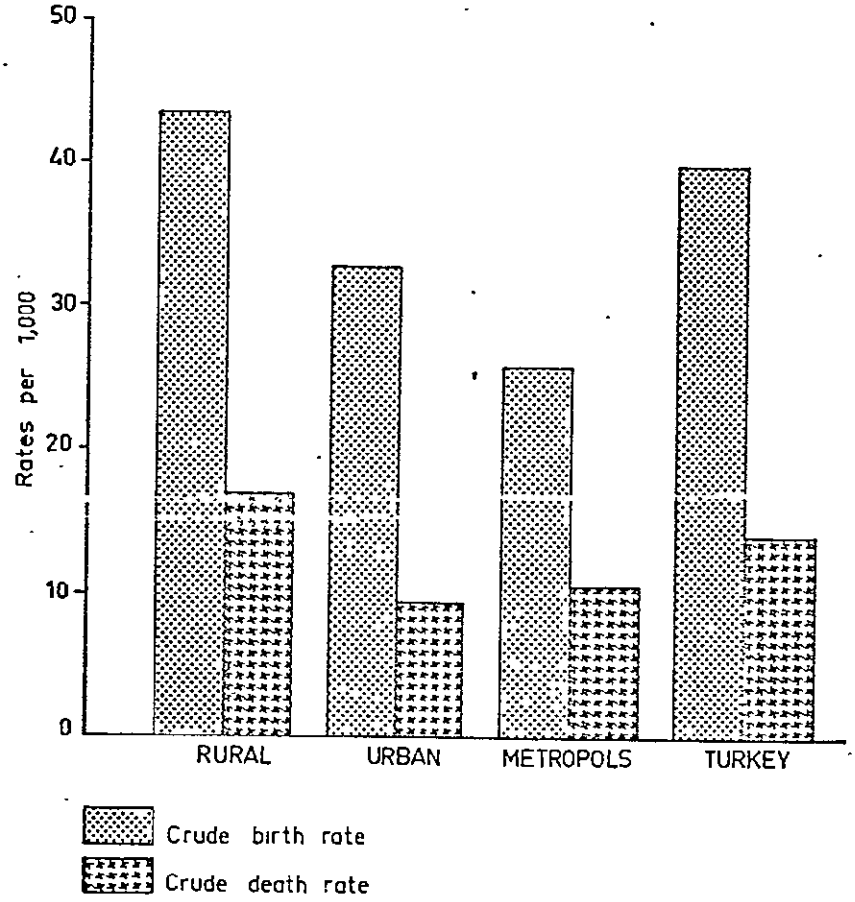

50
40
30
20
10
0
Rates per 1,000
RURAL
URBAN
METROPOLS
TURKEY
Crude birth rate
Crude death rate

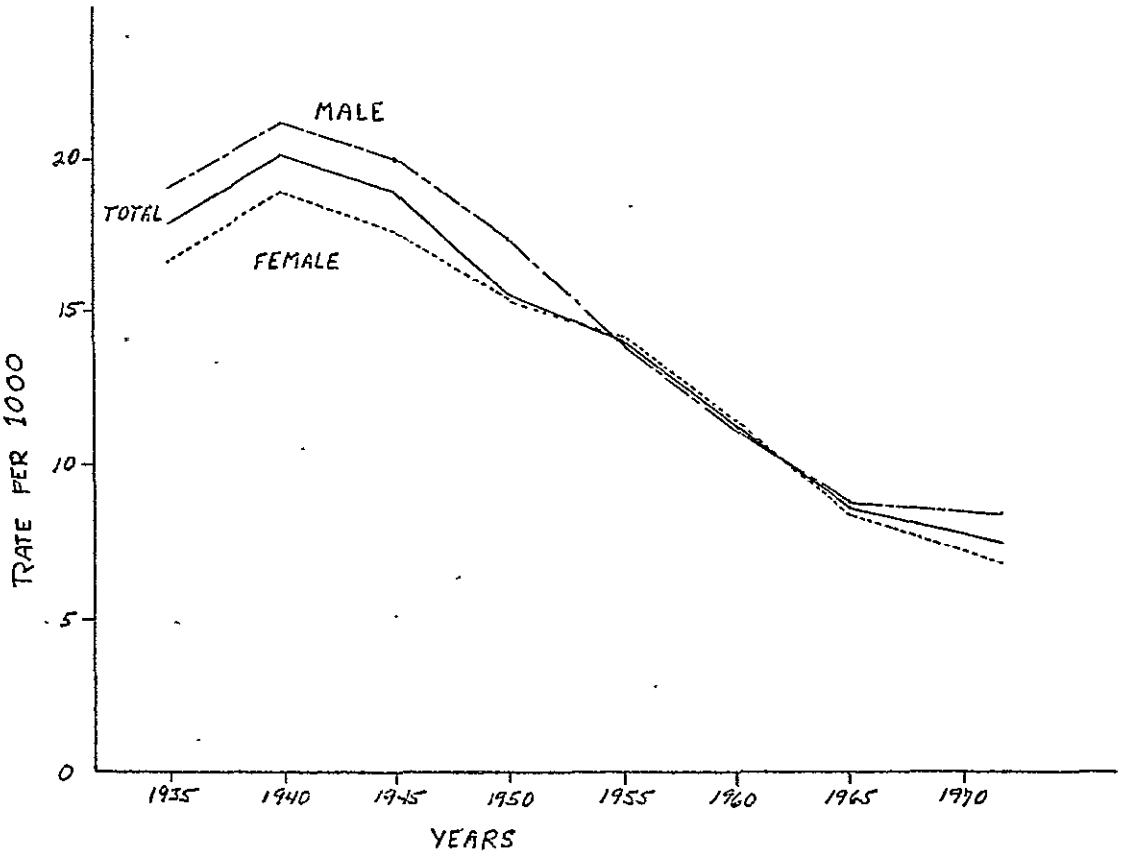
Table 5

Death Rates by Region, 1966-67

Region		Crude Death Rate (Deaths per 1,000 Population)	Infant Mortality Rate (Deaths per 1,000 Live Births)	Percentage of Deaths 0-4 Age Group	Percentage of Deaths 50+ Age Group
Turkey	Total	14.6	153.0	50.9	32.7
	Rural	16.7	168.3	54.9	29.8
	Urban	10.7	114.3	38.8	41.5
Central	Total	18.3	192.3	–	–
	Rural	21.7	214.7	62.5	23.7
	Urban	11.2	116.2	47.0	35.9
Northern	Total	14.0	140.6	–	–
	Rural	14.9	147.9	51.8	31.3
	Urban	10.5	108.8	42.2	38.1
Western	Total	12.9	136.8	–	–
	Rural	14.7	141.6	41.7	43.7
	Urban	10.9	148.6	32.4	49.6
Southern	Total	11.3	137.9	–	–
	Rural	13.2	171.8	60.8	26.9
	Urban	8.9	82.2	40.2	36.2
Eastern	Total	14.7	126.7	–	–
	Rural	15.5	130.4	53.7	27.8
	Urban	12.2	113.1	53.1	27.2

Source: Y. Heperkan et al., Vital Statistics from Turkish Demographic Survey 1966-67 (Hacettepe Press, 1970).

Figure 6: Changes in Mortality, 1935-70


MALE
TOTAL
FEMALE
20
15
10
5
0
RATE PER 1000
1935
1940
1945
1950
1955
1960
1965
1970
YEARS

The unadjusted age specific death rates for Turkey are given in Table 6. For women in rural and urban areas the rates are 9.0 and 13.9 deaths per thousand population, respectively, as compared with 9.7 in urban areas and 15.7 in rural areas for men.

The sex specific death rates in provincial centers for the female population dropped from 16.7 deaths per thousand population in 1935 to 6.8 per thousand in 1970. The rate for the male population also declined from 19.0 per thousand to 8.2 per thousand during the same period.

High childhood mortality is one of the characteristics of the mortality pattern in Turkey. Death rates among those between five and 55 years of age do not differ appreciably from the age-specific death rates of developed countries.

During the decade 1960-to 1970, the age specific death rate in provincial centers for children one year of age decreased from 141.8 deaths per thousand population to 90.5 per thousand. For those between one and four years of age the rate decreased from 12.5 per thousand to 3.8 per thousand. A declining trend has been observed for all age groups, as shown in Table 7.

The regional and urban-rural differences in proportionate death rates are shown in Table 5. In 1966-67, deaths of persons under one year of age, between one and four and over 50 years of age in Turkey were 37.2, 13.7 and 32.7 percent of the total deaths, respectively.

Data needed to follow the changes in proportionate death rates are available only for provincial centers. The proportionate mortality rate for those under one year of age in provincial centers dropped from 34.5 percent in 1960 to 28.4 percent in 1970 and from 11.6 percent to 6.1 percent for those between one and four years of age. For those over 50 years of age the rate increased from 37.0 percent to 53.3 percent in the same period.[25] (See Figure 7.)

Table 6
Death Rates by Age and Sex, 1966-67*

Age Groups	Male			Female			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
0-1	103.2	191.5	163.7	91.9	169.5	145.2	97.6	180.7	154.6
1-4	8.3	18.4	15.2	7.7	16.8	14.0	8.0	17.6	14.7
5-9	1.8	2.9	2.5	1.8	2.1	2.0	1.8	2.5	2.3
10-14	1.4	1.7	1.6	1.3	1.6	1.5	1.3	1.7	1.6
15-19	1.6	1.9	1.8	1.4	2.3	2.0	1.5	2.1	1.9
20-24	2.9	3.5	3.3	1.9	3.0	2.6	2.3	3.2	2.9
25-29	2.5	3.4	3.1	2.9	3.1	3.0	2.7	3.3	3.1
30-34	2.7	4.2	3.6	2.9	3.5	3.3	2.8	3.8	3.4
35-39	4.1	4.5	4.3	3.2	4.5	4.0	3.7	4.5	4.2
40-44	4.9	6.8	6.0	4.2	5.3	4.8	4.5	6.0	5.5
45-49	9.1	11.0	10.3	5.8	8.2	7.3	7.5	9.5	8.8
50-54	9.7	12.1	11.3	8.5	9.8	9.4	9.1	10.9	10.3
55-59	16.0	19.2	18.1	12.9	17.1	15.6	14.4	18.2	16.9
60-64	25.6	32.4	30.2	18.6	21.0	20.2	21.7	26.3	24.8
65-69	35.6	37.9	36.9	27.5	33.1	31.2	31.2	35.3	34.0
70-74	59.9	70.9	67.1	46.9	64.5	58.5	51.9	66.9	61.7
75-79	97.3	111.8	106.0	69.8	89.0	81.5	80.3	97.4	90.6
80 +	176.6	175.3	175.7	141.1	127.5	133.8	154.3	144.2	147.9
Total	9.7	15.7	13.6	9.0	13.9	12.3	9.3	14.8	12.9

* Number of deaths per 1,000 persons in given age and sex groups.

Source: Y. Heperkan et al., Vital Statistics from the Turkish Demographic Survey, 1966-67 Hacettepe Press, 1970).

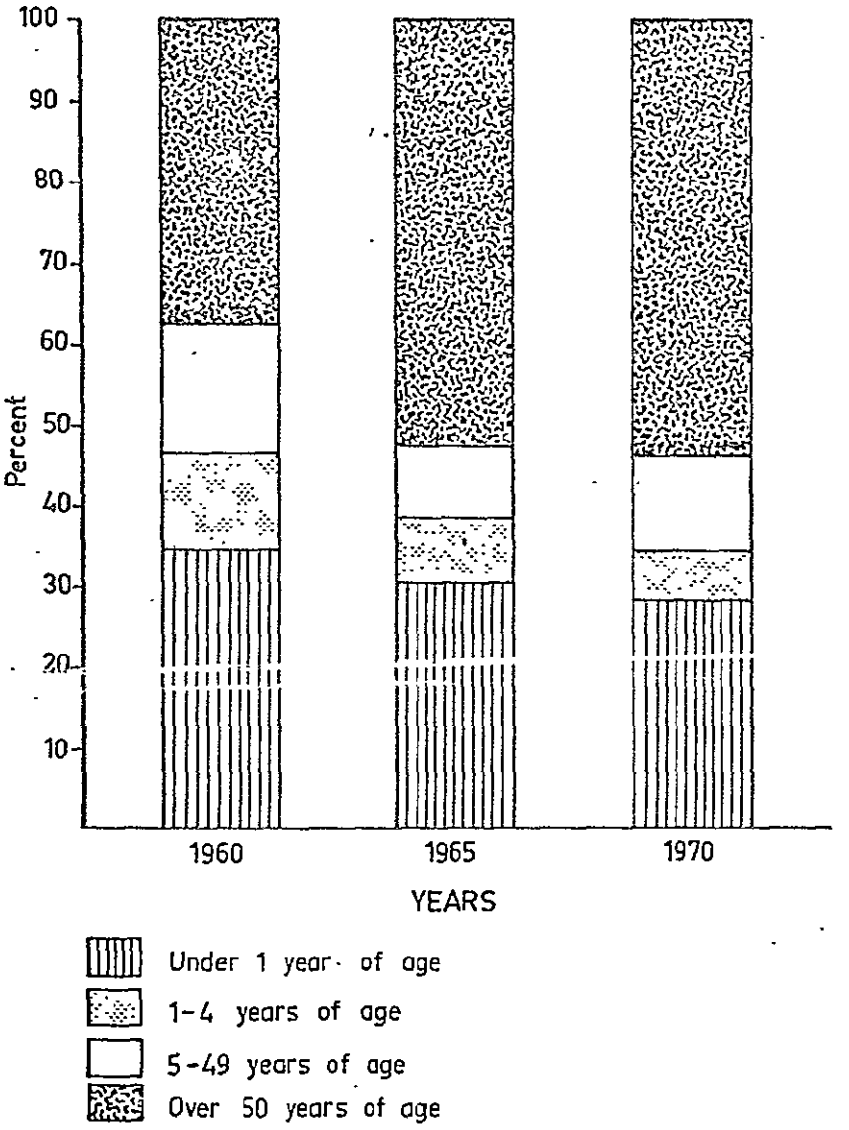
Table 7

Age and Sex Specific Death Rates per 10,000 Population
and Changes in the Last Decade in the Provincial Centers of Turkey

Age in Years	1960 Male	1960 Female	1960 Total	1965 Male	1965 Female	1965 Total	1970 Male	1970 Female	1970 Total
Under 1	148.5	134.3	141.8	118.7	109.4	114.3	98.3	85.2	90.5
1-4	12.2	12.8	12.5	6.6	6.8	6.7	3.9	3.7	3.8
5-14	1.6	1.3	1.4	1.1	0.9	1.0	0.8	0.6	0.7
15-24	1.6	1.8	1.7	1.3	1.3	1.3	1.5	0.9	1.2
25-34	2.5	2.8	2.6	2.4	2.2	2.3	2.5	1.4	2.0
35-44	4.6	3.7	4.1	4.1	3.0	3.6	4.1	2.3	3.3
45-54	10.7	6.1	8.6	11.2	5.9	8.6	9.5	4.5	7.0
55-64	25.8	14.9	20.2	47.0	25.6	36.7	22.2	12.1	17.2
65+	69.8	60.2	64.5	66.4	57.6	62.0	57.3	55.5	56.4

Sources: 1965 Population Census (in Turkish; State Institute of Statistics Publication No. 468) and
1960 Population Census (in Turkish; State Institute of Statistics Publication No. 568).

Figure 7: Changes in Proportionate Mortality, 1960-70


100
90
80
70
60
50
40
30
20
10
Percent
1960
1965
1970
YEARS
Under 1 year of age
1-4 years of age
5-49 years of age
Over 50 years of age

Life expectancy: According to the life tables of 1966-67, life expectancy at birth is 52.51 years for males and 56.27 years for females, as shown in Table 8. The level differed by region whereby life expectancy in rural areas (for both sexes) was 52.79 years, compared with 58.64 years for urban areas; the rate was even higher in the metropolitan provinces of Istanbul (60.46 years) and Izmir (62.44 years). The lowest life expectancy at birth was 48.30 years for rural areas in central Turkey. A point worthy of note is that the expectancy at age five is higher than at birth in all regions due to high infant and childhood loss. For instance, for the whole country, life expectancy at age five was 62.24 years, compared to 54.89 years at birth. The corresponding figures for rural regions were 61.48 and 52.79 years, respectively, and for urban regions, 63.59 and 58.64 years.[26]

Abortions and stillbirths: A nationwide survey carried out in 1968 found that the abortion rate in Turkey is 24 per hundred live births or 62 per thousand married women of reproductive age. These figures include both induced and spontaneous abortions and are higher than the rates in 1963.[27] Urbanization, education and income are the most important factors affecting the abortion rate. The relation between the abortion rate and urbanization is shown in Figure 8. As Table 9 shows, the rate is 13 abortions per hundred live births in the villages and 97 per hundred live births in the metropols. It is lowest (18 per hundred live births) among women who have not attended school and highest (146 per hundred live births) among women who have completed junior high school or a higher level of education. The effect of the family's income on abortion differs according to rural and urban areas. In rural areas, the abortion rate decreases as income increases; in urban areas, the correlation between income and the abortion rate is positive.

Table 8
Life Expectancy by Age and Sex

Age Groups	Life Expectancy (years) Males	Females
0	52.51	56.27
1-4	61.74	64.69
5-9	61.36	64.15
10-14	57.10	59.70
15-19	52.56	55.16
20-24	48.01	50.66
25-29	43.56	46.24
30-34	39.14	41.88
35-39	34.88	37.55
40-44	30.54	33.29
45-49	26.41	29.05
50-54	22.45	24.86
55-59	18.57	20.95
60-64	15.29	17.49
65-69	12.47	14.21
70-74	9.46	11.15
75-79	7.26	9.11
80 +	5.69	7.49

Source: Life Tables, 1966-67 (in Turkish; State Institute of Statistics, Publication No. 623).

Figure 8: Rates of Contraceptive Users, Marital Fertility and Abortion in Rural and Urban Populations

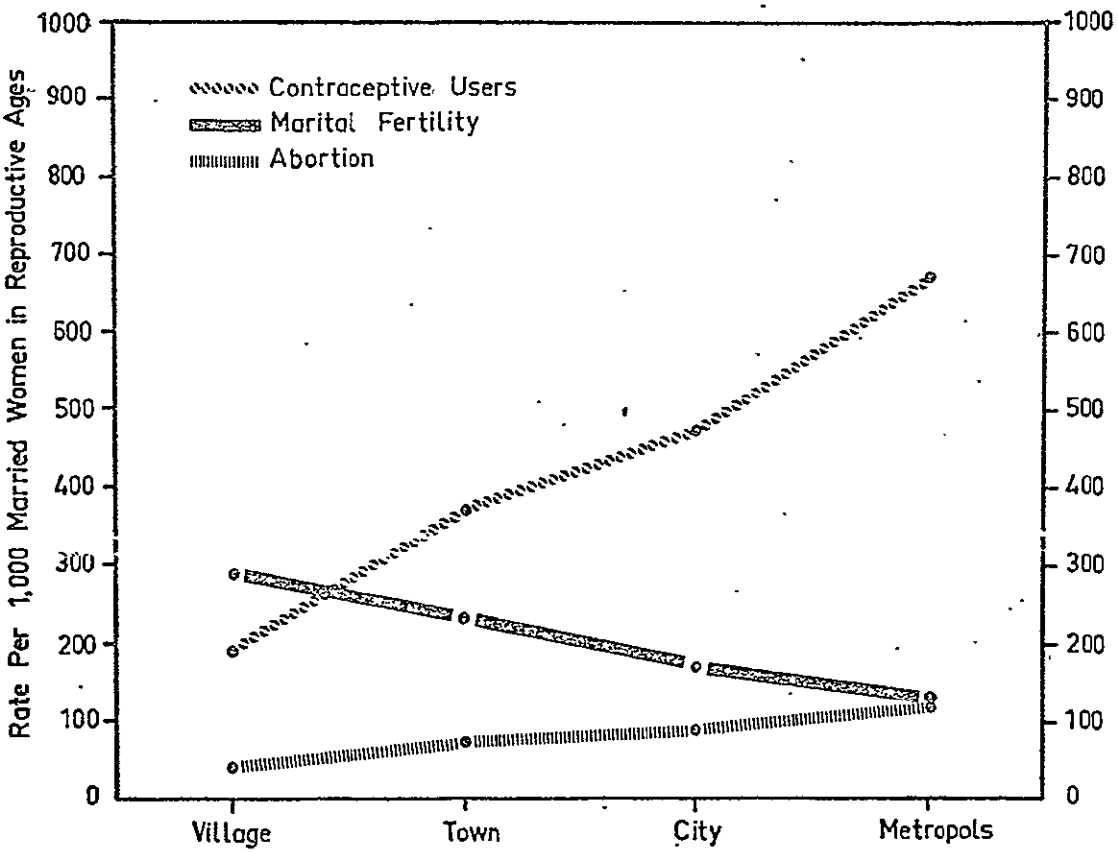

Contraceptive Users
Marital Fertility
Abortion
Rate Per 1,000 Married Women in Reproductive Ages
1000
900
800
700
600
500
400
300
200
100
0
Village
Town
City
Metropols

Table 9
Abortions and Stillbirths

Region	Stillbirths per 1,000 Live Births	Abortions per 1,000 Live Births	Abortions per 1,000 Married Women of Reproductive Age
Turkey			
Total	12.7	24	62
Rural	12.3	13	38
Urban	13.1	97	89
Central	17.5	33	89
Northern	4.8	20	58
Western	17.9	37	63
Southern	6.1	16	46
Eastern	9.6	10	34

Sources: Stillbirth data were taken from Y. Heperkan et al., Vital Statistics from the Turkish Demographic Survey, 1966-67 (Hacettepe Press, 1970); abortion data are from N.H. Fişek, "An Epidemiological Study on Abortion in Turkey" presented at the International Planned Parenthood Federation Conference on Induced Abortion: A Hazard to Public Health (Beirut: February 1971).

Migration: A high rate of internal and international migration has been one of the significant features of population movement in Turkey during the last decade.

An analysis of internal migration shows that in 1960, 11 percent of the population were not living in the provinces in which they were born. This figure increased to 13.2 percent in 1965. According to Tümertekin, in 1960, the provinces which received migrants were Istanbul, Ankara, Adana, Samsum, Eskişehir and Sakarya, in order of the numbers of in-migrants.[28] A majority of the remaining provinces--two thirds of the total provinces--such as Trabzon, Giresun, Sivas, Kastamonu, Çankırı, Malatya and Erzincan--lost population.

Shorter, who analyzed the 1960 and 1965 census results, found that 843,167 persons left their communities between the two census years. Eighteen percent of the migrants were children under five years of age and 31 percent were women. The average out-migration rate was 5.03 per thousand per year and the average in-migration rate was 3.74 per thousand per year. The twelve provinces where migration was highest are shown in Table 10.

Karahasanoğlu, who studied migration to cities with more than 100,000 population, has shown that migratory moves are inversely related to distance.[29] In all cities, the highest proportion of migrants came either from the same region or from the adjacent region. The percentages of in-migration to these cities from different regions are given in Figure 9.

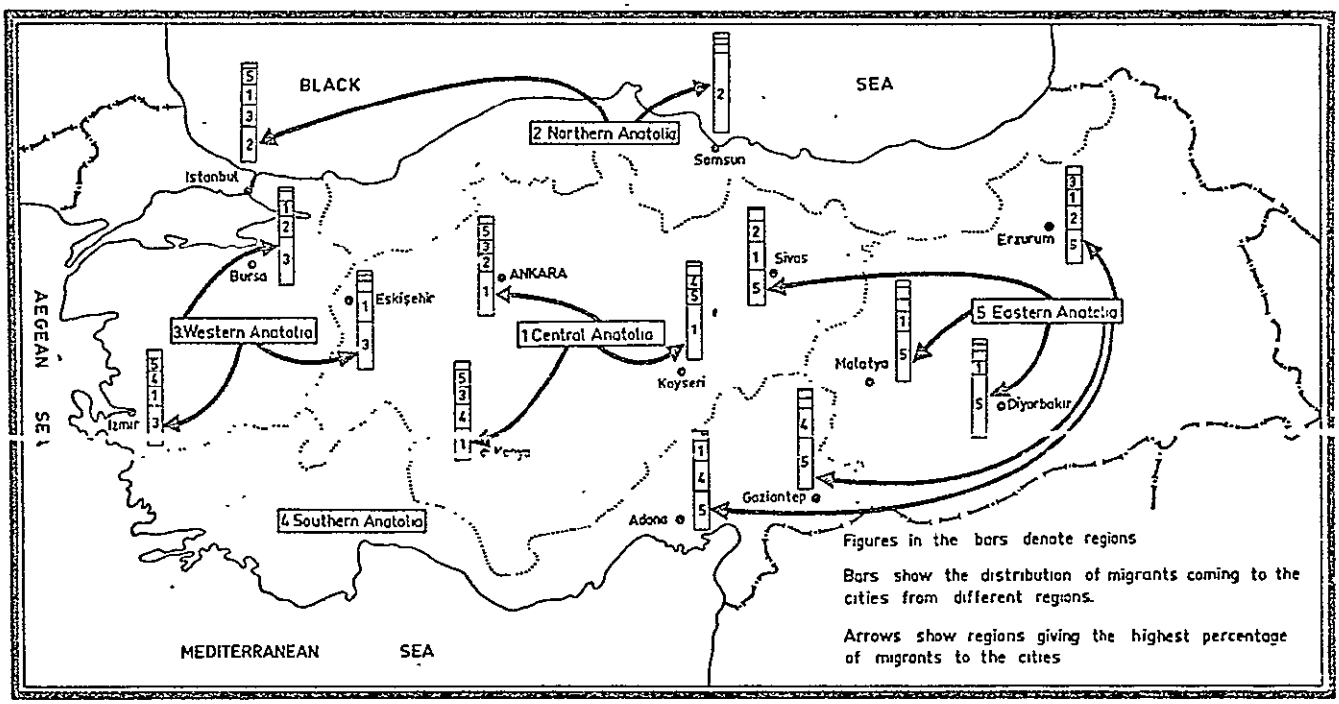
Rural-urban and urban-rural migration was studied by Shorter using the data of the 1968 sampling survey on family structure and population problems. He found that 75.9 percent of the migrants moved from smaller communities to larger ones between the years 1960 and 1968. The migration rate from villages to towns and then to cities was four times higher than direct migration from

Table 10
Net Migration in Provinces with Highest In- or Out-Migration Between 1960 and 1965

Province	Number of Migrants per Year				Net Migration Rate per 1000 Population
	Children	Female	Male	Total	
İstanbul	9,366	24,484	26,736	60,536	5.62
Ankara	6,390	11,499	1,333	31,199	4.22
İzmir	2,438	5,035	6,872	14,346	2.50
Manisa	556	1,429	2,767	4,751	1.36
Adana	2,272	257	832	2,272	0.80
Aydın	681	594	504	1,779	0.72
Gümüşhane	-1,128	-1,674	-2,913	-5,715	-4.52
Erzurum	-860	-1,399	-3,143	-5,902	-3.22
Çankırı	-1,602	-1,968	-3,073	-6,643	-5.36
Kastamonu	-1,410	-2,666	-3,659	-7,735	-3.54
Trabzon	-1,971	-2,344	-4,057	-8,372	-2.96
Sivas	-2,468	-4,067	-6,043	-12,578	-3.66

Source: E. Tümertekin, Internal Migration in Turkey (Istanbul: Istanbul University Institute of Geography, 1968).

Figure 9: Regions Losing Population to Large Cities


BLACK
SEA
2 Northern Anatolia
Samsun
Istanbul
Bursa
Eskişehir
ANKARA
3.Western Anatolia
1 Central Anatolia
Kayseri
Sivas
Erzurum
5 Eastern Anatolia
Malatya
Diyarbakır
Gaziantep
Adana
İzmir
4 Southern Anatolia
AEGEAN SEA
MEDITERRANEAN SEA
Figures in the bars denote regions
Bars show the distribution of migrants coming to the cities from different regions.
Arrows show regions giving the highest percentage of migrants to the cities

villages to metropols. Urban-rural migration, 24.1 percent of the population movement, was mostly from cities other than metropols to villages.[30]

As far as international migration is concerned, immigration to Turkey is limited. The total number of immigrants since 1923 has been 1.2 million, around 5,000 every year during the last decade. The last large immigration took place in 1950-51 when 150,000 immigrants arrived from Bulgaria.

Emigration was relatively low before the 1960s, but increased very rapidly after 1960. Data on the exact number of Turkish citizens living abroad is not available, although the number of emigrants between 1960 and 1965 was estimated to be 206,464. Of these, 17.4 percent were women and 16.1 percent were children under five years of age.[31] Turkish authorities estimate the number of Turkish citizens who migrated abroad temporarily to be near one million and the number of workers leaving Turkey every year for Europe to be around 60,000.[32]

The "brain drain" is quite sizable in Turkey. The estimated number of medical doctors, engineers, chemists and others who work abroad is more than 3,600. Of these, 2,000 are medical doctors, a number that would provide ten percent of the medical manpower in Turkey.

Marriage and divorce

In Turkey, 81 percent of the population over 20 years of age and ten percent of the population between 12 and 19 were married in 1970. The marital status of women and men according to the results of the 1970 census is given in Table 11. Polygamy, although illegal, still exists. The number of married women exceeded the number of married men by 258,801 in the 1970 census, a situation which may be due both to polygamy and to labor migration to Europe. According to the results of the 1968 survey on family structure and population problems, only 1.9 percent of the men have more than one wife.[33]

Table 11

Marital Status of Men and Women 12 Years of Age and Over, 1970

Marital Status	Men		Women		Total	
	Number	Percent	Number	Percent	Number	Percent
Married	7,159,244	60.6	7,418,945	63.6	14,577,289	62.1
Single	4,319,692	36.6	3,020,134	25.9	7,339,826	31.3
Widowed	226,153	1.9	1,091,996	9.4	1,318,149	5.6
Divorced	54,753	0.5	86,040	0.7	140,793	0.6
Unknown	48,975	0.4	46,934	0.4	95,909	0.4
Total	11,808,817	100.0	11,663,149	100.0	23,471,966	100.0

Source: Unpublished data (State Institute of Statistics), One Percent Sampling Results of 1970 Census.

Marriage and divorce statistics are available only for cities and towns. The number of marriages and divorces was 117,495 and 9,568, respectively, in 1965. The rate of divorce is 1.3 divorces per thousand couples. The chance of being divorced decreases as length of marriage and parity increase; more than half of the divorced couples are childless.[34]

The age at marriage is relatively high in Turkey and shows a tendency to increase as one moves from village to city and from the eastern parts of Anatolia to the west. The percentage of women who have never married and who are over 45 years of age is 0.68 percent for all of Turkey; regional variations are given in Table 12.

Family structure, children ever born and children surviving: The nuclear family is predominant in Turkey. Types of families and average size of families are distributed as follows:

Type of Family	Average Number of Persons	Percent of All Families
Nuclear	5.5	59.7
Transitionally extended	6.4	13.1
Patriarchally extended	8.3	19.0
Dissolved and nonfamily households	2.6	8.3

The percentage of nuclear families increases from 55.4 percent of the total families in rural areas to 67.9 percent in metropolitan areas. The average number of persons in nuclear families decreases from 6.1 in rural areas to 4.1 in metropolitan areas.[35]

The standardized mean of children ever born to mothers between 15 and 44 years of age is 3.86. This measurement varies between 2.56 and 4.28 in metropolitan and rural areas. The average parity at the end of the fertile period is 5.63 for the whole country, varying between 3.03 and 6.61 for metropolitan and rural areas.[36] The standardized mean of children surviving is 2.88 and the average number of surviving children for mothers in the age group 40 to 44 is 4.13. (See Table 13.)

Table 12

Regional Variations in Median Age of Women at First Marriage and Percentages of Never-Married Women

Regions		Median Age at First Marriage	Percentage of Women Over 45 Never Married
Turkey	Rural	18.3	0.49
	Urban	18.5	1.02
	Total	18.3	0.68
Metropols	Ankara	18.4	1.26
	İstanbul	19.1	2.64
	İzmir	19.0	1.77
Central	Rural	18.0	0.28
	Urban	18.2	0.36
Western	Rural	18.3	0.23
	Urban	18.4	0.61
Northern	Rural	18.7	1.02
	Urban	18.8	0.63
Southern	Rural	18.5	0.14
	Urban	18.4	0.39
Eastern	Rural	17.9	0.60
	Urban	18.1	1.00

Source: Y. Heperkan et al., Vital Statistics from the Turkish Demographic Survey, 1966-67 (Hacettepe Press, 1970).

Table 13

Children Ever Born and Children Surviving

	Children Ever Born (to Women 15-44 Years of Age)	Children Surviving (to Women 15-44 Years of Age)	Children Ever Born (Standardized Mean)	Children Surviving (Standardized Mean)
Turkey	5.63	4.13	3.86	2.88
Metropols	3.03	2.53	2.56	2.11
Other Urban	4.88	3.69	3.57	2.78
Rural	6.61	4.72	4.28	3.09

Source: Unpublished master's thesis (Hacettepe Institute of Population Studies, 1971) by F. Karadayı, "Socio-Economic Correlates of Fertility Behavior and Attitudes in Turkey."

Population projections

The average population growth rate has been 25 per thousand during the last ten years. The population of Turkey will be 75.5 million in 2000 if this rate of growth does not change. If the growth rate decreases steadily and reaches 15 per thousand or zero growth within thirty years, the population will be either 65.0 million of 51.9 million in the year 2000. The estimated population figures for 1980 and 1990 are given in Table 14.

One of the characteristics of population dynamics in Turkey is rapid urbanization, as has been discussed. If the actual rate of population increase in urban centers, which at present is 48 per thousand per year, does not change, the urban population will be 42.1 percent, 52.6 percent and 66.8 percent of the total population in 1980, 1990 and 2000, respectively. More detailed information on urbanization and trends with respect to different sizes of urban communities is given in Table 15.

The population under 14 years of age will decrease to 33.9 percent and that over 65 years of age will increase to 5.3 percent by 2000 if the birth rate decreases by ten percent every five years. The male/female ratio will be 103. Projections of age and sex distribution of the population between 1970 and 2000 are given in Table 16.

Table 14

Population Projections for Turkey, 1970-2000

Growth Rate	Actual Population (millions) 1970	Projected Population (millions) 1980	1990	2000
1. Constant (25 per 1,000)	35.7	45.8	58.8	75.5
2. Declining from 25 per 1,000 in 1970 to 15 per 1,000 in 2000	35.7	45.0	55.0	65.0
3. Declining from 25 per 1,000 in 1970 to zero growth in 2000	35.7	43.9	49.8	51.9

Source: Unpublished data (Documentation Center, Hacettepe Institute of Population Studies).

Table 15

Population Projections for Urban Communities

Population of Urban Community	1970 Number of Communities	1970 Population (millions)	1973 Number of Communities	1973 Population (millions)	1977 Number of Communities	1977 Population (millions)
10,000-25,000	134	1.91	166	2.53	153	2.47
25,001-50,000	58	1.92	66	2.35	80	2.79
50,001-100,000	20	1.36	28	1.84	36	2.45
100,001-500,000	17	2.76	20	3.61	31	5.82
500,000+	3	3.98	3	4.66	3	5.75
Total	232	11.93	283	14.99	303	19.28

Source: Unpublished data (Documentation Center, Hacettepe Institute of Population Studies).

Table 16
Population Projections by Age and Sex

Age groups	Sex	Population (thousands) 1970	1980	1990	2000
0-14	Male	7,625	9,425	11,225	12,485
	Female	7,162	8,979	10,797	11,967
	Total	14,787	18,404	22,022	24,452
15-65	Male	9,705	13,504	17,305	22,300
	Female	9,597	13,184	16,772	21,514
	Total	19,302	26,695	34,027	43,814
65+	Male	713	9,555	1,198	1,813
	Female	824	1,085	1,348	2,057
	Total	1,537	2,042	2,546	3,870
Total	Male	18,062	23,895	29,728	36,593
	Female	17,604	23,235	28,867	35,538
	Total	35,666	47,130	58,595	72,135

Source: Unpublished data (Documentation Center, Hacettepe Institute of Population Studies).

EPIDEMIOLOGICAL INFORMATION

Causes of death

Like much data, information on causes of death in Turkey is available for provincial centers only. In many cases, causes of death are not diagnosed by attending physicians, but by medical officers on the basis of information given by the family members of the deceased. The A list with 150 headings (revised 1955) is used by the State Institute of Statistics to classify the last cause of death. Information on the principal and intermediate causes is not available. The ten leading causes of death in 1960, 1965 and 1970 are given in Table 17 and in Figure 10.

Among the ten leading causes of death, pneumonia was in first place in 1960 and dropped to second place in 1965 and 1970. The pneumonia death rate declined from 19.5 deaths per 10,000 population in 1960 to 9.6 per 10,000 in 1970. All kinds of heart diseases, including cardiac insufficiency, were the primary cause of death in provincial centers in Turkey in 1965 and 1970. The rate, which was 20 deaths per 10,000 population in 1970, has not changed appreciably during the last decade.

Other causes of death which show change over time are infections of the newborn and accidents. The death rate due to infections of the newborn dropped from 5.5 deaths per 10,000 population in 1960 to 2.9 per 10,000 in 1970. The death rate for accidents increased from 2.5 deaths per 10,000 population in 1960 to 3.6 per 10,000 in 1970.

Communicable diseases

Special diseases: Malaria was the most serious health hazard in Turkey before the 1950s. It was estimated that 65 percent of the total population suffered from malaria in 1925, and the spleen index was found to be 36 percent.

Table 17

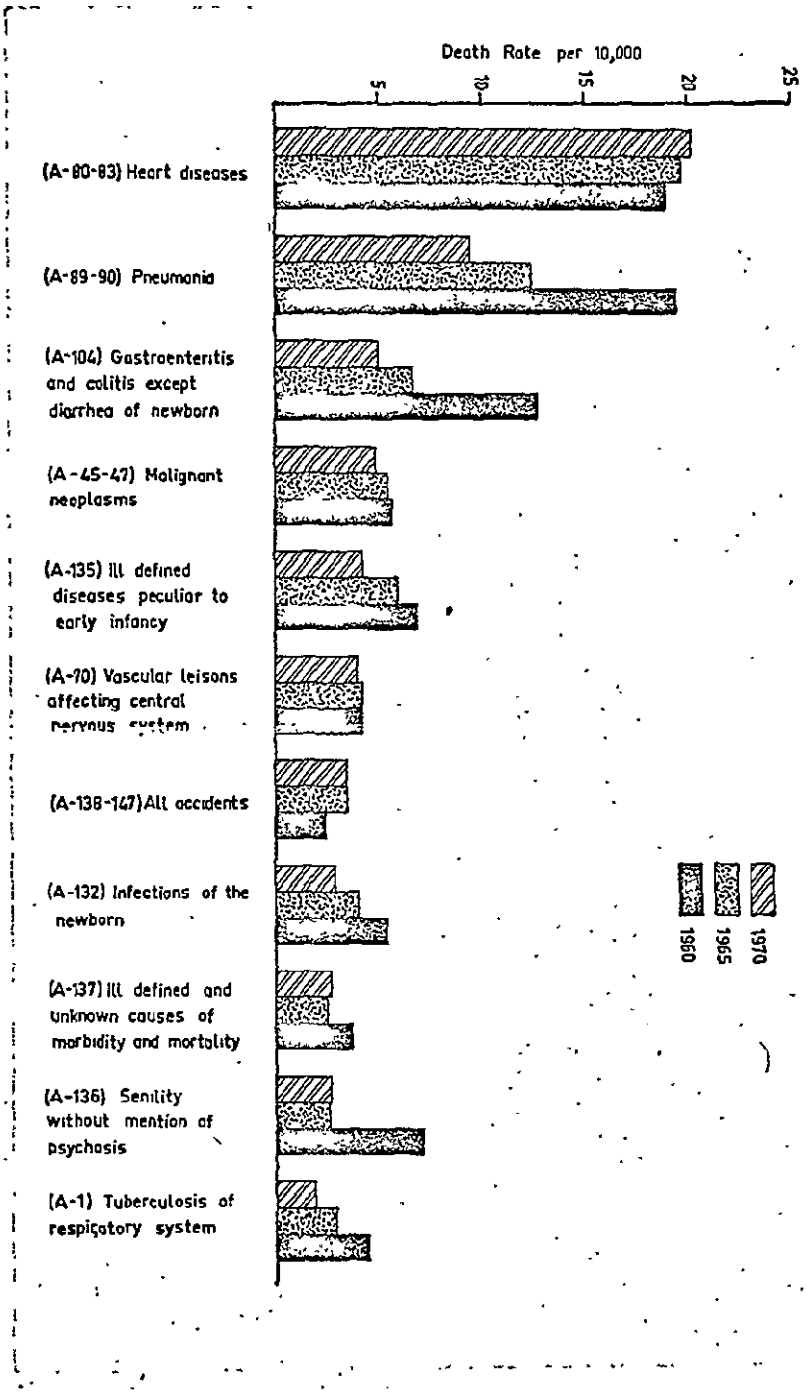
Causes of Death in Provincial Centers in Turkey
1960, 1965 and 1970

Cause of Death	Rank in Ten Leading Causes			Number of Deaths			Cause Specific Death Rate (per 10,000 Population)			Percent of Total Deaths		
	1960	1965	1970	1960	1965	1970	1960	1965	1970	1960	1965	1970
Heart diseases	2	1	1	16,869	21,352	27,941	19.0	19.8	20.2	16.8	22.3	26.7
Pneumonia	1	2	2	17,304	13,551	13,256	19.5	12.5	9.6	17.2	14.2	12.7
Gastroenteritis and colitis except diarrhea of newborn	3	3	3	11,321	7,395	6,856	12.8	6.8	5.0	11.2	7.8	6.6
Malignant neoplasms	6	5	4	5,091	5,938	6,723	5.7	5.5	4.9	5.1	6.2	6.4
Ill-defined diseases peculiar to early infancy	5	4	5	6,083	6,526	5,840	6.9	6.0	4.2	6.0	6.8	5.6
Vascular lesions affecting central nervous system	9	6	6	3,740	4,661	5,781	4.2	4.3	4.1	3.7	4.9	5.5
Accidents	-	8	7	-	3,915	4,915	-	3.6	3.6	-	4.2	4.7
Infections of newborn	7	7	8	4,837	4,407	4,728	5.5	4.1	2.9	4.8	4.6	4.5
Ill-defined and unknown causes	10	-	9	3,329	-	3,912	3.8	-	2.8	3.3	-	3.7
Senility without psychosis	4	9	10	6,435	3,874	3,814	7.3	3.6	2.8	6.4	4.1	3.7
Tuberculosis of respiratory system	8	10	-	4,025	3,338	-	4.5	3.1	-	3.9	3.5	-
All other causes				21,766	20,470	20,790	24.6	18.9	15.0	21.6	21.4	19.9
TOTAL DEATHS				100,800	95,427	104,556	113.8	88.3	75.7	100.0	100.0	100.0

Sources: Data for 1960 are from Deaths in Province and District Centers, 1960 (in Turkish; State Institute of Statistics, Publication No. 423) and 1960 Population Census (in Turkish; State Institute of Statistics, Publication No. 468); 1965 data are from Deaths in Province and District Centers, 1965 (in Turkish; State Institute of Statistics, Publication No. 553) and 1965 Population Census (in Turkish; State Institute of Statistics, Publication No. 568); data for 1970 are from unpublished data (State Institute of Statistics).

Figure 10: Ten Leading Causes of Death in Urban Centers 1960, 1965 and 1970

Sources: Unpublished data (State Institute of Statistics); Deaths in Province and District Centers, 1960 (in Turkish; State Institute of Statistics, Publication No. 423); Deaths in Province and District Centers, 1965 (in Turkish; State Institute of Statistics, Publication No. 553) and 1965 Population Census (in Turkish; State Institute of Statistics, Publication No. 568).

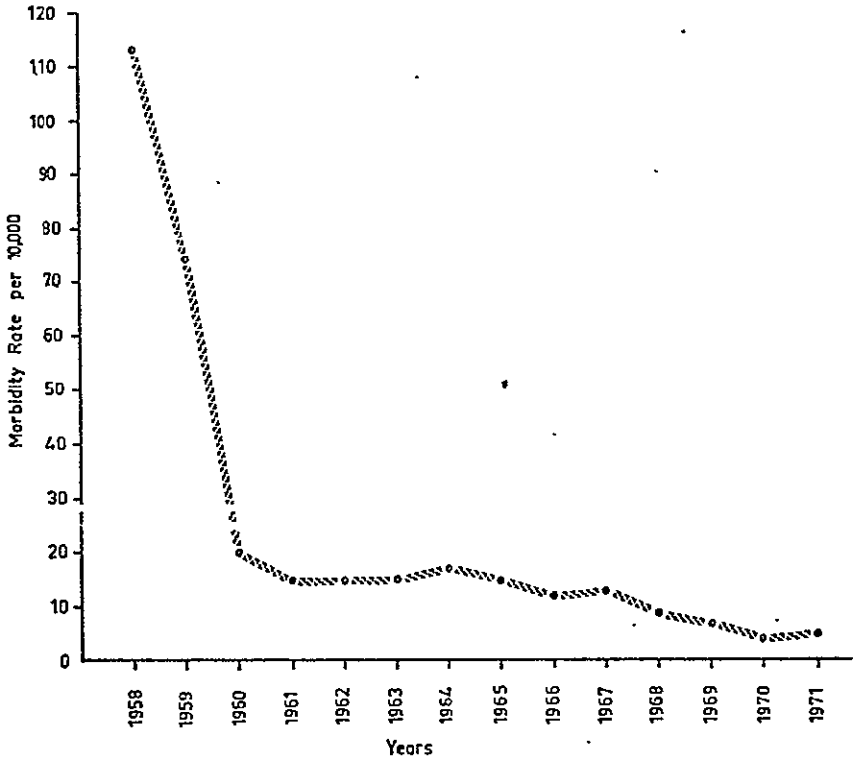

Death Rate per 10,000
5
10
15
20
25
(A-80-83) Heart diseases
(A-89-90) Pneumonia
(A-104) Gastroenteritis and colitis except diarrhea of newborn
(A-45-47) Malignant neoplasms
(A-135) Ill defined diseases peculiar to early infancy
(A-70) Vascular leisons affecting central nervous system
(A-138-147) All accidents
(A-132) Infections of the newborn
(A-137) Ill defined and unknown causes of morbidity and mortality
(A-136) Senility without mention of psychosis
(A-1) Tuberculosis of respiçatory system
1960
1965
1970

The great effort spent by the Ministry of Health began to control malaria, and the number of cases and deaths decreased steadily until 1942. During the Second World War incidence of the disease increased again because of military movements and wartime conditions. The spleen index rose to 41.5 percent in 1945. In the same year, a special law was passed for a nationwide campaign against malaria. Due to this campaign and the improvement in the general welfare of the nation, the number of malaria cases decreased considerably. In 1957, the Turkish government started a program to eradicate malaria, a project which WHO and UNICEF agreed to support. Although malaria has not been completely eradicated in Turkey, the project was a great success and the disease was eradicated in many provinces. In regions covered by the campaign, the morbidity rate was 113 cases per ten thousand population in 1957 but dropped to four per ten thousand in 1970 (see Figure 11).[37]

The main reason for the failure of complete malaria eradication in Turkey is the impossibility of stopping transmission in provinces on the border of Iraq. After 1969, imported cases in provinces in the consolidation phase started to increase and transmission occurred in some communities as well.

Tuberculosis has been a great health problem in Turkey. An extensive program to control tuberculosis started in the early 1950s and was greatly assisted by WHO and UNICEF. At the beginning of the campaign against tuberculosis, tuberculin reactors rates in the age groups 0-6, 7-14 and 15-19 were 14, 35 and 57 percent, respectively. Preliminary mass-screening surveys in both rural and urban areas demonstrated that the rate of active tuberculosis cases was between 2.5 and three percent of the population. The tuberculosis death rate in provincial centers is also high, declining from 21 per ten thousand population in 1935 to 1.4 per ten thousand in 1970.[38]

Figure 11: Prevalence of Malaria, 1958-71


Morbidity Rate per 10,000
120
110
100
90
80
70
60
50
40
30
20
10
0
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
Years

The three main principles of the campaign against tuberculosis have been to carry out nationwide BCG vaccination programs on a continuous basis in order to have a BCG-vaccinated generation within 30 to 50 years, to detect new cases by X-ray screening and to organize home care and limit hospital care for necessary cases.[39]

During the BCG vaccination program between 1953 and 1970, 57.5 million tuberculin tests were performed and 25.9 million persons, including the revaccinated, were vaccinated. A recent survey reveals that 60 percent of the total population and 80 percent of the population under 24 years of age have been vaccinated against tuberculosis. Between 1960 and 1971, 9.9 million persons were screened by X-ray. The total number of detected cases was 115,910.

The tuberculosis prevalence rate among the population screened in 1970 was 9.8 cases per thousand, and in 1971 the estimated number of active tuberculosis cases was around 200,000. The mortality rate dropped to 1.8 deaths per ten thousand cases in the provincial centers in 1970.

Trachoma was a hyperendemic disease in the southeastern part of Turkey with a prevalence rate of 74 percent among persons who were examined in 1932. The disease has never been a problem in the rest of the country. The Turkish government started a special program to combat trachoma in the early 1930s. The discovery of antibiotics and the assistance of WHO and UNICEF made it possible for the government to carry out a more extensive and successful campaign against the disease.[40] The number of persons examined each year reached two million, and the prevalence of trachoma in endemic areas dropped to 2.9 percent. In 1971 there were 9.5 million persons living in endemic areas and the number of active cases was 161,508. The rate

of blindness from all causes is 1.2 cases per thousand population. No new cases of blindness due to trachoma have been reported for several years.

Syphilis showed a prevalence rate above one percent in some communities before the 1930s and was an endemic disease. The Ministry of Health initiated a mass-screening campaign in these communities in the 1930s. Yearly new cases which numbered around 20,000 in the 1930s dropped to 8,000 in the 1960s. In 1971, the prevalence and incidence of syphilis was 3.9 per ten thousand (13,617 cases) and 0.11 per ten thousand (411 cases), respectively.

Leprosy is not a serious health problem in Turkey. The number of known cases was about 1,000 before the 1960s. The Ministry of Health, with the assistance of UNICEF and WHO, began a systematic screening program in the eastern part of the country where most of the cases were found. The number of cases under treatment reached 3,710 in 1970 and about 100 cases have been detected during recent years.[41]

Other communicable diseases: The Ministry of Health has always given high priority to the control of outbreaks and epidemics of communicable diseases. Since the reporting of some diseases such as measles, whooping cough, dysentery and streptococcal infections is improving, the number of reported cases of communicable diseases rises every year.[42] Therefore, the morbidity data are not suitable for use in studying the trend. If deaths due to communicable diseases are taken as a parameter to follow changes in trend, it is seen that the communicable disease death rate is decreasing steadily, having dropped from 4.7 deaths per 10,000 population in 1930 to 1.6 per 10,000 in 1970. (See Table 18 and Figure 12.)

The communicable diseases most frequently reported after tuberculosis and measles are infectious hepatitis, typhoid fever, scarlet fever, diphtheria, poliomyelitis, anthrax, menengococcic meningitis and rabies, in that order. The average number of cases between 1966 and 1970 and their prevalence rates

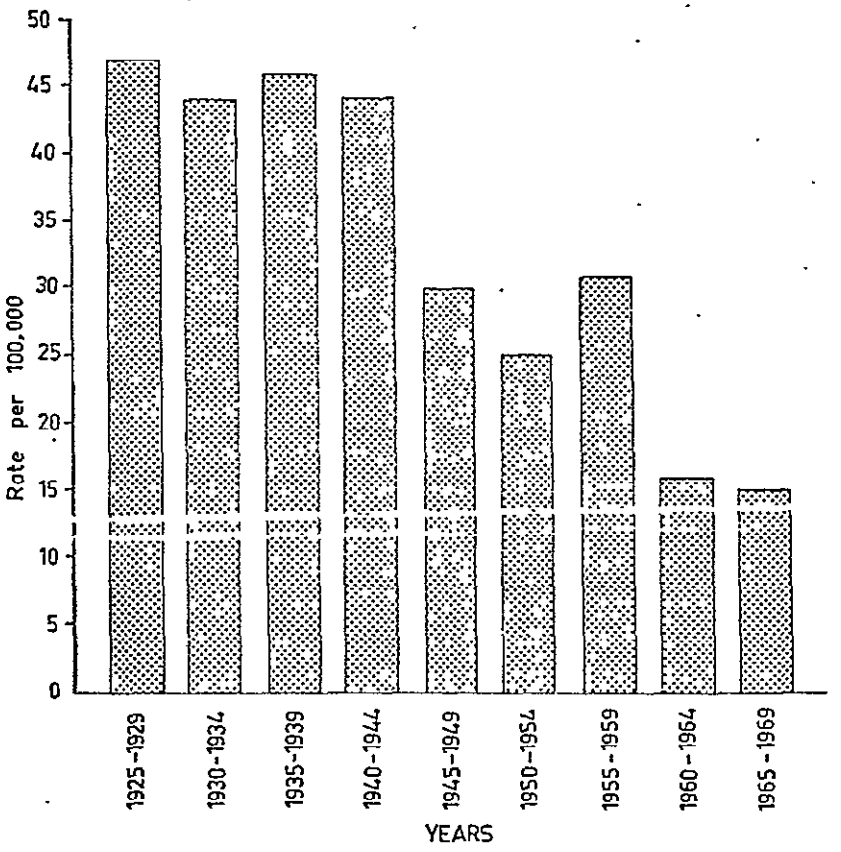
Table 18

Morbidity and Mortality Changes Over Time Due to Communicable Diseases

Years	Population	Cases	Cases per 10,000 Population	Deaths	Deaths per 10,000 Population	Case Fatality (Percent)
1925-29	13,641,000	43,299	31.7	6,388	4.7	14.75
1930-34	15,071,000	63,547	42.1	6,705	4.4	10.55
1935-39	16,631,000	77,442	46.5	7,769	4.7	10.03
1940-44	18,144,000	88,080	48.5	8,078	4.4	9.17
1945-49	19,495,000	84,494	43.3	5,888	3.0	6.97
1950-54	21,953,000	170,560	77.7	5,528	2.5	3.24
1955-59	25,252,000	175,147	69.4	7,886	3.1	4.50
1960-64	28,993,000	184,563	63.7	4,654	1.6	2.52
1965-69	32,724,000	388,631	118.8	5,218	1.6	1.34

Source: Annual Reports of the Ministry of Health on Communicable Diseases.

Figure 12: Death Rates of Communicable Diseases, 1925-69


50
45
40
35
30
25
20
15
10
5
0
Rate per 100,000
1925-1929
1930-1934
1935-1939
1940-1944
1945-1949
1950-1954
1955-1959
1960-1964
1965-1969
YEARS

are given in Table 19. Whooping cough, dysentery and streptococcal infections other than scarlet fever probably should also be among the highly prevailing diseases, although whooping cough has not been listed among the reported diseases for many years. Under-reporting of dysentery and streptococcal infections is due to lack of laboratory facilities.

The order of diseases according to death rates is diphtheria, typhoid fever, poliomyelitis, infectious hepatitis, rabies, menengoccic meningitis, anthrax and scarlet fever (see Table 19).

Typhus fever was endemic in Turkey before 1955, the average annual number of reported cases of epidemic typhus being 800 between 1925 and 1955. The highest figure was 4,142 in 1943. No cases of epidemic typhus fever have been reported since 1955.

Smallpox cases were reported sporadically between 1925 and 1951, showing quite large outbreaks in various parts of the country. The number of reported cases between 1943 and 1944 was more than 18,000. No cases of smallpox have occurred since 1952, except for a small outbreak in 1957.

No cases of cholera were reported in Turkey between 1925 and 1969. In an outbreak of cholera in Istanbul in 1970, the number of cases reached 284.[43] However, no cases of cholera were reported in 1971.

Plague is not an endemic disease in Turkey. Forty cases were reported between 1925 and 1929, and in 1947 another outbreak occurred with 18 cases. One case was reported in 1949. All of these cases occurred in villages near the Syrian border. They may have been either imported cases or results of some foci of sylvatic plague in this particular part of Turkey.

HEALTH SERVICES

Structure, coverage and patterns of change in the health system

The Ministry of Health and Social Assistance is the organization primarily responsible for the administration and execution of health services in Turkey.

Table 19

Prevalence of Some Communicable Diseases

Between 1966 and 1970

Diseases	Average Number of Reported Cases Per year	Average Number of Reported Deaths Per year	Prevalence Rate per 100,000 Population	Death Rate per million Population
Infectious hepatitis	6,153	50	19.4	1.5
Typhoid fever	3,912	94	11.7	2.8
Scarlet fever	2,235	5	6.7	0.01
Diphtheria	1,619	127	4.8	3.8
Poliomyelitis	1,230	60	3.7	1.8
Anthrax	1,024	8	3.1	0.02
Meningococcic meningitis	347	37	1.0	1.1
Rabies	46	46	0.1	1.4

Source: Annual Reports of the Ministry of Health on Communicable Diseases.

Various public institutions, such as the armed forces, the Social Insurance Administration, the universities, the State Economic Enterprises and the provincial and municipal administrative bodies, also take part in the health services--especially in the field of patient care. Despite the fact that the First Five-Year Development Plan (accepted by the Parliament in 1962) envisaged unification of the health organizations under the direction of the Ministry of Health and Social Assistance, this goal has not yet been realized.[44] The contribution of the private sector to health services is limited mostly to home care and private office practice.

The central body of the Ministry of Health and Social Assistance is responsible for the planning of health services, the setting of standards and the formulation of laws and regulations, the preparation of the budget and the allocation of budgetary resources, the inspection and evaluation of services and finally, the appointment, transfer and promotion of all health personnel employed in the health organization. The Ministry of Health and Social Assistance consists of general directorates, departments and independent directorates headed by the Undersecretary of State.[45]

The largest local administrative unit is the province, which is subdivided into districts (kaza); the district, in turn, is further divided into subdistricts (bucak). Provincial services, including health services, are conducted by governors appointed by the central government. The governor of the province represents the council of ministers and executes the services in the name of the government, bound by the laws and directives issued by the ministries. Health services at the provincial level are carried out within the framework of a dual system, which emerged in 1961 by the promulgation of the Act of Nationalization of Health Services.[46] According to the First Five-Year Development Plan, the nationalization of health services is to take place for a period of 15 years and four to five provinces are to be covered annually. In short, there will be a gradual transition from the health organization

subordinate to the general administration to the health organization envisaged by the Act of Nationalization of the Health Services.

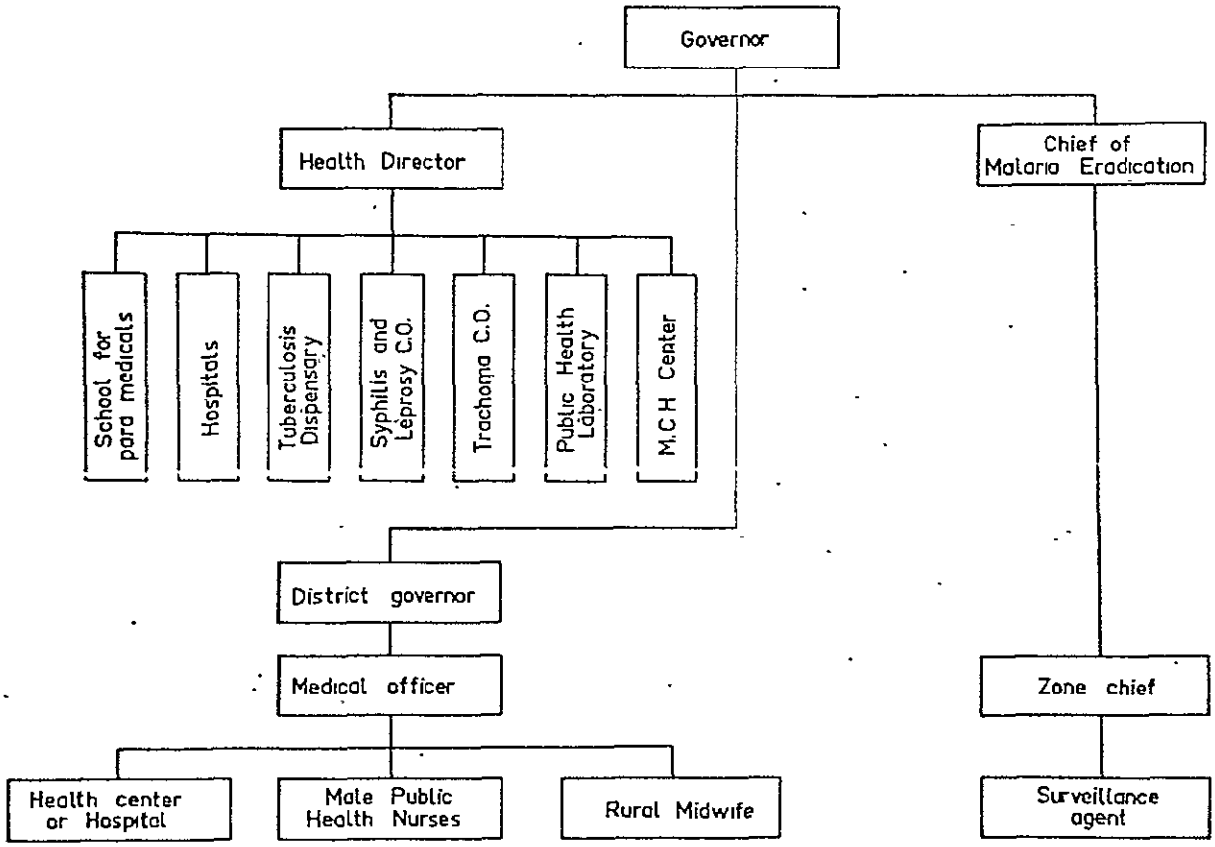
Health organization in general provincial administration: At present, health administration in 42 out of 67 provinces is a constituent part of the provincial administration according to Act 3017 of the Law of Organization of the Ministry of Health. Figure 13 shows the administrative diagram for the provinces. Within this organizational structure, the governor is responsible for making decisions on administrative and financial matters. Decisions of a technical nature are within the responsibility of the provincial health director. Hospitals, schools for paramedical personnel, tuberculosis, leprosy, trachoma and syphilis dispensaries and maternal and child health centers are attached to the provincial health directorate.

In the districts, general administration is headed by the district governor (kaymakam). The population of a district in Turkey varies between 2,000 and 100,000, the average being 50,000. The person responsible for health services in the district is the medical officer. In addition to a doctor, a male public health nurse (sağlık memuru) and rural midwives are attached to the office of the medical officer. Any hospitals or health centers in the district are also attached to that office. Since the administrative and financial sides of the implementation and execution of health services at the district level are proposed by the medical officer and decided upon by the district governor, he is no less important than the medical officer in the implementation of health services.

Medical officers are responsible for all public health works and judicial and administrative services; the sağlık memuru are responsible for the control of communicable diseases and rural sanitation problems and rural midwives are usually responsible for groups of six to eight villages. These midwives reside in villages located more or less in the center of the group. The primary task of the rural midwife is to assist at deliveries and take part in maternal and

Figure 13: Organizational Chart of General Provincial Health Administration

Source: Law Concerning the Socialization of the Health Services (Official Gazette, No. 10705).


Governor
Health Director
Chief of Malaria Eradication
School for para medicals
Hospitals
Tuberculosis Dispensary
Syphilis and Léprosy C.O.
Trachoma C.O.
Public Health Laboratory
M.C.H Center
District governor
Medical officer
Zone chief
Health center or Hospital
Male Public Health Nurses
Rural Midwife
Surveillance agent

child health services. However, their services to villages where they do not reside are limited.

In addition to the general health administration as mentioned above, some provincial centers, districts and villages have maternal and child health units. One or more doctors and several nurses work in the maternal and child health centers and subcenters, which do not serve the entire city or town in which they are located, but only a specific area. The village stations, which are attached to these centers, serve four villages and are each staffed by a rural midwife.

There are mobile and permanent clinics for family planning services. Mobile teams serving rural areas are attached to the General Directorate of Family Planning. Permanent clinics are built in maternity hospitals, general hospitals and maternal and child health centers.

In addition to the general health organization, a separate organization for malaria eradication activities is composed of regional malaria eradication units, which are headed by a medical officer and consist of supervisors, surveillance agents, laboratory technicians and spraying teams.

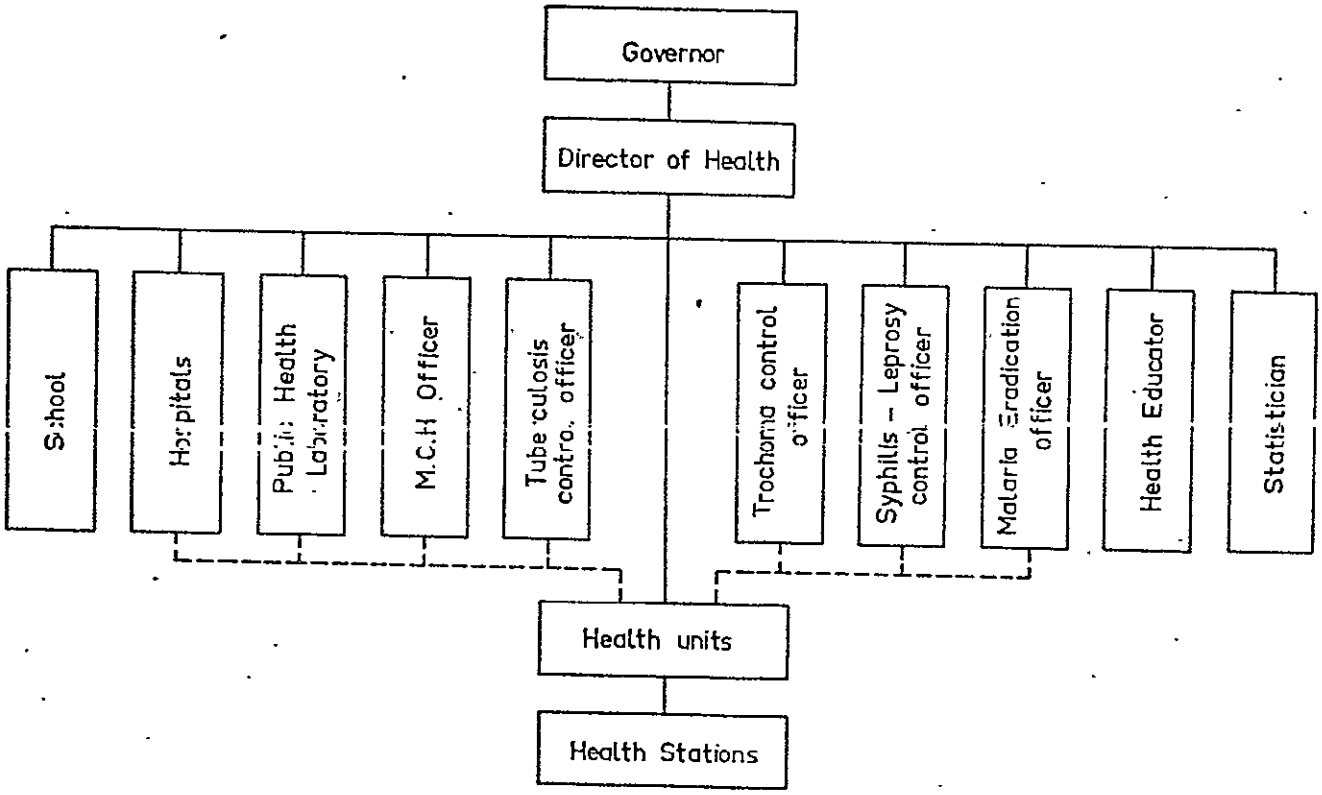
Special units in the provinces work for tuberculosis control. Among these are BCG vaccination teams, mobile X-ray teams, dispensaries and chest disease hospitals.

Special units exist for the control of trachoma, syphilis and leprosy in areas where these diseases are endemic.

Health organization in the provinces where health services have been nationalized: One of the main features of the national health services that differentiates it from the health organization described above is that the national organization combines all the health units and personnel of a province into one team under the direction and supervision of the director of health, as shown in Figure 14.

Figure 14: Organizational Chart of Turkish National Health Services

Source: N. H. Fisek, "An Example of an Integrated Approach to Health Care: The Turkish National Health Services," in G. Wolstenholm, M. O'Connor and J. A. Churchill, Teamwork for World Health (London: 1971).


Governor
Director of Health
School
Hospitals
Public Health Laboratory
M.C.H Officer
Tuberculosis contro. officer
Trochoma control officer
Syphilis – Leprosy control officer
Malaria Eradication officer
Health Educator
Statistician
Health units
Health Stations

The primary organizational unit in the provinces where health services have been nationalized is the health unit which is attached to the local health directorate. A health center serves an average of 7,000 persons. Each health unit is staffed by one doctor, two nurses (one male, one female) and two to four midwives. The health unit undertakes home care and ambulatory care and extends all forms of preventive services, in addition to supporting community development activities. The average population per rural midwife is 2,500 persons. Midwives here are responsible for antenatal and postnatal care, for assistance in deliveries, for the care of children under the age of six, for family planning services, home visits, health education and for similar services. Nurses working at the health centers supervise the activities of the rural midwives and provide on-the-job training for the midwives.

Hospitals in the provinces and specialized public health units such as tuberculosis dispensaries support and supplement the activities of the health units. These specialized units are subordinate to the local health directorates.

Other local health organizations: In addition to health organization in the general provincial administration and the national health services, municipal health authorities are responsible for environmental health, and international quarantine officers at sea and airports are responsible for the control of international passenger traffic.

Administrative principles and evaluation: Health services in the general provincial administration, in the treatment and care of patients in the hospitals, in the health centers and in the offices of the medical officers are free of charge for those who are poor. Payments are made only by those who are able to meet the hospital and treatment charges, although even these payments fall far short of the actual cost incurred. Preventive services and the treatment of infectious diseases are free of charge to all.

These services have extended the campaign against communicable diseases

to the most remote villages of the country. The same, however, cannot be said for the extension of maternal and child health services and patient care services, which have lagged behind considerably. Another factor adversely affecting the implementation of health services through the general provincial administration is that doctors employed in the public sector are allowed to carry on private practice. Hence, medical officers are reluctant to leave the district centers where they reside, which in turn prevents the efficient execution and inspection of health services in the villages.

Preventive and curative services are rendered free of charge in the provinces where health services have been nationalized.[47] All health personnel, including the medical doctors, are employed on a full-time and fixed-salary basis and have no private practice. This arrangement provides a highly favorable basis for the extension of health services in general and preventive services in particular. For the time being, the high vacancy rate in the national health service area hinders the development of services at the expected level. One outstanding example of the rapid and highly satisfactory expansion of health services in the areas where these services have been nationalized is the Etimesgut Teaching Health Center.[48]

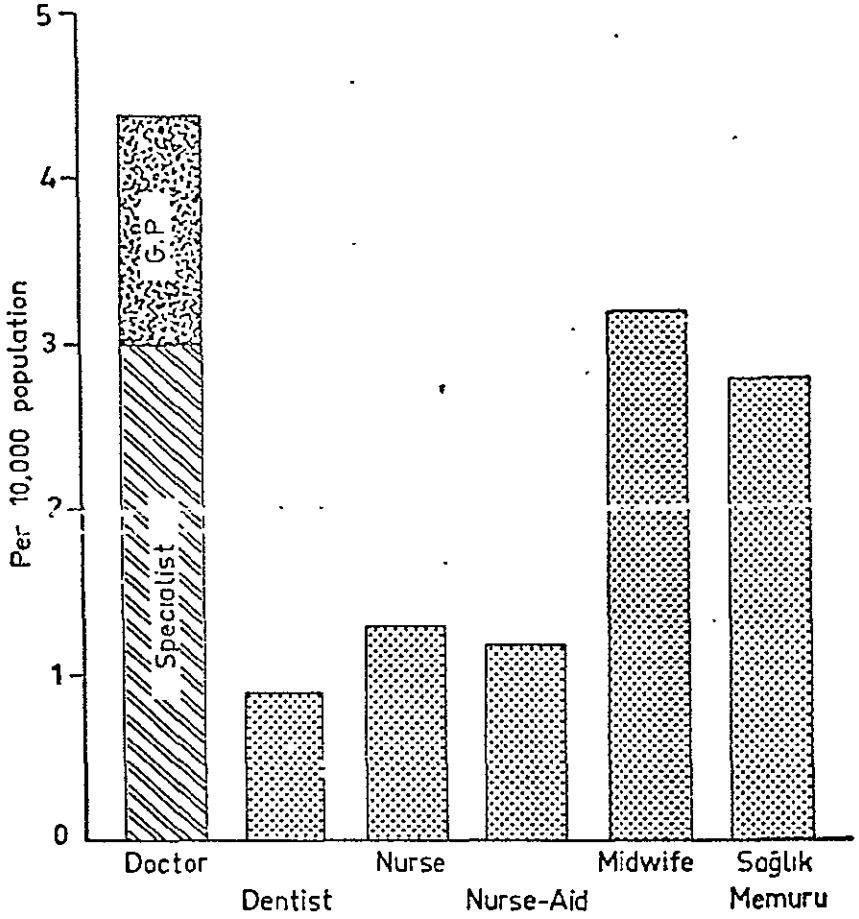
Health manpower

The shortage and poor distribution of health manpower is a serious problem confronted by the health services in Turkey. In 1970, the numbers of doctors, dentists and paramedical workers per ten thousand population were 4.4, 0.9 and 8.4, respectively. The numbers of these and other health personnel are shown in Figure 15.

Physicians: Medical education in Turkey dates from 1206, when a medical school was established in Kayseri. The schools established by the Turks in Anatolia during the Middle Ages were the most prominent and advanced centers of medical education and practice at that time. Following the Renaissance--

Figure 15: Distribution of Health Manpower, 1970

Source: Unpublished data (Ministry of Health).


Per 10,000 population
5
4
3
2
1
0
G.P
Specialist
Doctor
Dentist
Nurse
Nurse-Aid
Midwife
Sağlık
Memuru

especially in the seventeenth and eighteenth centuries--medicine advanced by leaps and bounds in Europe, while theory and practice lagged behind in the aforementioned schools. As a result, the necessity for reform in medical education began to be felt deeply in the nineteenth century. The adoption of the western system of medical education was marked by the establishment of a medical school in Istanbul in 1827. The second faculty of medicine was established 119 years later (1946) in Ankara. Faculties of medicine were subsequently established in Izmir (1954), Ankara (1963, Hacettepe Faculty of Medicine), Erzurum (1964), Istanbul (1967, Cerrahpaşa Faculty of Medicine) and Dıyarbakır (1969). These medical faculties had 701 graduates in 1968, 912 graduates in 1969 and 908 graduates in 1970.[49]

Medical education in Turkey requires six to seven years of study and can be started after completion of the lycée. This time span includes premedical studies. Internship is not compulsory; only one school requires internship before graduating its students.[50]

According to the records of the Ministry of Health, the number of medical doctors in Turkey was 15,856 as of December 1, 1970.[51] The distribution of doctors is as follows: 26 percent work in the Ministry of Health, eight percent in the Social Insurance Administration, four percent in the provincial and municipal administrative bodies and 16 percent in other public institutions, while 46 percent practice privately. The estimated 2,000 doctors who practice abroad have not been included in the above figures.

The population/doctor ratio, which is one doctor per 2,249 persons for Turkey, is quite satisfactory as compared to other developing countries. This ratio, however, does not reflect the degree to which the population benefits from the doctors' services. Inter-provincial distribution of doctors is highly disparate. Of all the doctors in practice, 69 percent are concentrated in the three most highly developed provinces--Ankara, Istanbul and Izmir. For example,

the population/doctor ratio is 491 for the province of Istanbul. In Yozgat, however, a province in central Anatolia, one doctor serves an average population of 19,000. Table 20 provides population/physician ratios showing that nearly half of the provinces have a population/physician ratio of 7,500 or above.[52] The disparities in the distribution of doctors become even more obvious when a distinction is made between villages and the cities--the population/doctor ratio in communities with populations under 10,000 is 23,063.[53] On the other hand, the population/doctor ratio falls to 642 in cities having a population of more than 100,000. Rural communities having doctors consist of three percent of all villages.

A further impediment to the efficient utilization of medical manpower and a major cause of waste is the fact that a large majority of the doctors specialize in one field alone. Excluding the residents in the hospitals, only 31.2 percent of the total of practicing doctors are general practitioners. According to statistics prepared by the Ministry of Health, of the 15,856 doctors practicing in December 1970, exactly 10,241 or 64 percent were specialists. Of the total number of specialists, 7,258 or 71.8 percent are practicing in the three most economically developed provinces.

Nurses and midwives: Prior to 1961, the Turkish government had attached little importance to the training of nurses and midwives. With the exception of the school for nurses established by the Turkish Red Crescent Society, the school for midwives of the Istanbul Faculty of Medicine and two schools established by the Ministry of Health and Social Assistance for the training of the sağlık memuru, Turkey lacked training and education centers. Two schools for rural midwives where primary school graduates underwent a nine-month training period were established in 1940. The course was later extended to one and a half years. The first nursing school attached to the Ministry of Health was established in 1946. Courses were given in hospitals for the training of nurse-aids and were attended by women ward-workers over the age of 18.

Table 20
Provincial Distribution of Physicians
December 1970

Population per Physician	Number of Provinces	Physicians Number	Physicians Percent	Provincial Population Number	Provincial Population Percent	Average Population per Physician
1-2,500	3	10,990	69.3	6,448,590	18	587
2,501-5,000	18	2,617	16.5	9,915,095	28	3,789
5,001-7,500	13	1,186	7.5	7,509,443	21	6,332
7,501-10,000	13	548	3.5	4,751,566	13	8,671
10,001-12,500	6	148	0.9	1,685,251	5	11,387
12,501-15,000	10	277	1.7	3,791,939	11	13,689
15,001+	4	90	0.6	1,564,665	4	17,385
Total	67	15,856	100.0	35,666,549	100.0	2249

Source: The 1970 Annual Report of the Ministry of Health on Personnel Distribution.

In 1961, an extensive program was drawn up for the training of paramedical personnel, and the number of schools for paramedical workers reached 72 in 1971. These schools are evenly distributed throughout the country. One of the characteristics of the training of health personnel in Turkey is free education, including board and housing.

There are two levels of education for midwives. Nurse-midwives receive four years of professional training after junior high school. Rural midwives are village girls having completed primary education who are admitted to the rural midwifery schools. They follow a regular three-year program divided into a theoretical training period in schools and a practical training period in maternity hospitals.

Nurses can be trained through three programs--college education, basic nursing education and the nurse-aid program. The main body of the nursing profession in Turkey consists of nurses having completed basic nursing education courses.

University and college education for nursing takes four years after the lycée education. Girls and boys having completed junior high school are admitted to the basic nursing schools. More emphasis is put on rural sanitation and communicable disease control in the courses for male students (sağlık memuru) whereas maternal and child health and delivery services are stressed for female students. The training period for nurse-aids covers three years of theoretical and practical training in nurse-aid schools after the completion of primary education.

Despite the accelerated efforts after 1961 to recruit and train nurses and midwives, their numbers remain limited as a result of the predominant indifference in the pre-1960 period. At the end of 1970, a total of 30,071 paramedical personnel were in active service: 4,688 nurses (15.6 percent of the total); 4,108 nurse-aids (13.7 percent); 11,321 midwives and rural midwives (37.7 percent) and 9,959 sağlık memuru (33.0 percent). A comparison with the number of doctors

shows that for every doctor in Turkey, there are approximately 1.9 paramedical workers. The number of nurses in service constitutes 15.6 percent of the total paramedical personnel.

The provincial distribution of paramedical personnel, though far from being even, is more equitable than the provincial distribution of doctors. Forty-four percent of the nurses and nurse-aids, 24 percent of the midwives and 40 percent of the sağlık memuru employed by the Ministry of Health and Social Assistance are located in the provinces of Ankara, Istanbul and Izmir.[54]

Other professions: Public health engineering is not a well-established profession in Turkey. Only about 15 engineers have taken courses or had formal education in public health engineering. The first school for training environmental health technicians was established in 1961, with a training period of four years after junior high school education. The number of graduates between 1965 and 1971 was 269. Environmental health activities are run by medical officers and male public health nurses.

There are seven dentistry schools in Turkey. Of the 3,245 dentists in the country, 87 percent are practicing in the provinces of Ankara, Istanbul and Izmir.

Laboratory services are less developed than they are in the other health service branches, due to the shortage of well-trained personnel. Medical doctors, veterinarians, pharmacists, chemists and biologists may specialize in laboratory services. Working in the country now are 578 bacteriologists, 361 biochemists and 121 pathologists. The first school for training laboratory technicians was established in 1961, with a four-year training period after junior high school.[55]

Quackery: It is strictly illegal to practice medicine in Turkey without having had formal training in medicine. The same is true for assisting at births or making parenteral injections. The laws, however, do not prevent illegal practices of this nature. According to the results of a survey conducted in

1963, 39,731 native midwives and 30,275 needle-men were practicing illegally. A survey conducted to learn to whom patients go in cases of illness yielded the following results: 77.5 percent of the rural population and 86.2 percent of the urban population go to medical doctors; the remaining portion apply to pharmacists, paramedical personnel and/or quacks. Eight percent of the rural population and 4.6 percent of the urban population stated that they would go first to a quack.[56]

Health institutions

Hospitals: The total number of hospitals and hospital beds was 796 and 91,851, respectively, on December 1, 1971. Most of the hospitals are owned by the public sector. The number of hospital beds in privately owned hospitals was 4,750, which is 5.2 percent of the total hospital beds in Turkey. The distribution of hospitals and hospital beds according to the types of hospitals is given in Table 21. The distribution of hospital beds throughout the country is highly disparate, varying between one bed for every 125 persons in Istanbul to one bed per 2,053 persons in Hakkâri. Another evidence of disparity is that 45 percent of the hospital beds are located in the provinces of Ankara, Istanbul and Izmir.

Units for maternal and child health and family planning: The Ministry of Health started to establish special units for maternal and child health in the early 1950s and for family planning in 1965. At present, there are 50 centers, 56 subcenters and 425 rural stations specializing in these services. The number of maternity beds is 6,468 in 48 hospitals, the number of special clinics for family planning is 506, and that of mobile teams for rural areas is five.[57]

In addition to these special units, 868 health centers and 2,277 rural stations in the national health service areas have maternal and child health and family planning activities as their major functions.

Tuberculosis control units: The backbone of the tuberculosis control

Table 21

Types of Hospitals in Turkey

December 1971

Type of Hospital	Hospitals Number	Hospitals Percent	Hospital Beds Number	Hospital Beds Percent
General	384	48.3	61,943	67.4
Chest diseases	55	6.9	12,409	13.6
Maternity	48	6.0	6,468	7.0
Mental	4	0.5	5,000	5.4
Other specialized hospitals	19	2.4	2,315	2.5
Rural health centers with 10-25 beds	286	35.9	3,716	4.1
Total	796	100.0	91,851	100.0

Source: The 1972 Budget Report of the Ministry of Health.

organization is the dispensary. There are 232 dispensaries throughout the country, all of which are equipped with X-ray units. In addition, 40 mobile X-ray units are in operation. BCG vaccinations have been carried out by special teams since 1953 on a continuous basis. The present number of vaccination teams is 120 and that of the re-test teams is ten.

Other institutions: Several other types of specialized units include 62 public health laboratories, 43 trachoma dispensaries, 33 syphilis dispensaries and 11 lepra dispensaries.[58]

Health planning

The first comprehensive health plan as a part of the overall economic and social development plan was accepted by the Parliament in 1962. The principles of the plan are stated as follows:

> The main objective of the health program is to improve the health of the people. Priority is therefore given to the expansion of public health (preventive) services in the plan. These services include the improvement of environmental sanitation, health education, control of contagious diseases, improvement of nutrition and family planning. Curative health services are considered as complementary to preventive services. Priority is given to the establishment of health services which will extend to the smallest communities and will lay stress on home and outpatient treatment rather than on the more expensive system of hospitalization from which fewer people benefit.[59]

These same principles were accepted in the following plan periods as well. The major operational decisions of the plan are as follows:

1. Health services will be organized according to the National Health Service Project, which will be extended throughout the country within 15 years by nationalizing the service in three to five provinces every year.

2. The proper distribution of health manpower is the crucial administrative problem. Necessary measures will be taken in order to distribute the available health manpower according to the needs of the people.

3. The educational programs of the schools of medicine, nursing and midwifery will be developed so as to meet the needs of the community.

4. Priority at the national level will be given to prevention, home care, training of health personnel, family planning, malaria eradication, the control of tuberculosis and maternal and child health. Control of trachoma, leprosy and anchylostomiasis receives priority in some regions. Water supply, sewage systems and housing are not a part of the Turkish health plan, but are considered independently within the context of the development plan.

5. The criteria for the health units accepted for the Third Five-Year Development Plan are given in Table 22.

6. The targets of the Turkish health plans have been formulated as shown in Table 23.

Investments and expenditures for the health services

The foremost institutions investing in health in the public sector are the Ministry of Health and the Social Insurance Administration. Taken individually, and with the exception of the armed forces, the health expenditures of other public organizations are comparatively negligible. In 1970, the expenditure of the Ministry of Health was 879.4 million T.L. Thus, the average annual health expenditure per capita comes to approximately 50 T.L. The investment outlay was 183.9 million T.L. or 17.3 percent of the total health budget. Of the current expenditures of the Ministry of Health, 46.5 and 42.3 percent cover the expenses of the preventive services and medical care, respectively.

The breakdown of the expenditures for preventive services according to the programs in 1970 was as follows:[60]

National health service units	112,998,000 T.L.
Tuberculosis control	99,748,000 T.L.
Malaria eradication	56,411,000 T.L.
Population planning	16,318,000 T.L.
Other programs	120,537,000 T.L.

According to a study on the cost of the national health services, the per capita health expenditure of both preventive and curative services in the

Table 22

Criteria for Units in the Health Plan

	Urban Health Units	Rural Health Units*	Hospitals (per 100 beds)
Buildings			
Area (m.sq.)	270-340	690	5,000
Cost (TL)	500,000	690,000	6,000,000
Annual current expenditure (TL)	560,000	140,000	1,500,000
Medical doctors	5	1	8
Dentists	2	1	1
Midwives	2	5	-
Nurses or nurse-aids	15	4	10
Other professionals	2	-	12
Population served	25,000	7,000	40,000

* Including three health stations and houses for personnel

Source: The Report of Health Planning Committee for the Third Five-Year Development Plan.

Table 23

Realization of Health Plans in the Past and the Target for 1972

	Years			
	1962	1967	1970	1972 Target
Health units	0	800	868	2300
Population covered (in millions)	0	7.6	9.2	25.6
Hygiene Institutes	3	4	5	14
Tuberculosis Dispensaries	104	157	214	190
Total hospital beds	57,700	71,800	87,731	93,500
M.O.H. hospital beds	33,500	43,000	46,885	52,500
Medical schools	3	6	8	8
Schools for paramedicals	33	51	72	55
Medical doctors	6,900	7,753	15,856	16,741
Dentists	1,956	2,889	3,245	3,303
Nurses and midwives	8,210	14,593	30.071	29,489

Sources: First Five-Year Development Plan (1963-1967) (Ankara: Turkish Prime Ministry State Planning Organization, 1963); The Second Five-Year Development Plan (1968-1972) (Ankara: Turkish Prime Ministry State Planning Organization, 1969)and : 1971 Budget Report of the Ministry of Health.

national health services was 54 T.L. (equivalent to $3.85). Of this amount, 47 percent was for hospital care.

The health expenditure of the Social Insurance Administration was 642.9 million T.L. for 1,313,500 insured workers and for 722,977 family members of the workers, or 316 T.L. per capita.[61]

FAMILY PLANNING PROGRAM

Deliberate population policies

Population control policy: Three major stages in the development of the fertility control policy in Turkey can be identified. The first period, which lasted from 1920 to 1957, had not only the government but also the public enthusiastically in favor of rapid population growth. Turkey's population policy of this period, in the light of prevalent conditions, was realistic and unavoidable for many reasons.

The pronatalist policy was supplemented and supported by legislation at that time. The major provisions in the laws were as follows:

1. Families with six or more children were exempted from the "road construction tax," which was a heavy burden on the peasantry. Such a provision operated as a highly effective incentive to increase births.

2. Women with six or more living children were entitled to receive a material reward by the State. For those who wished it, an official medal was presented in place of material compensation.

3. The importation, sale and use of contraceptives were forbidden.

4. Those persons who actively tried to prevent pregnancy by encouraging and/or promoting birth control were subject to a prison term of one year or a fine of up to 1,000 T.L.

The second period of development took place from 1958 to 1969. The establishment of a special commission by the Ministry of Health in 1958 may

be regarded as the turning point of the pronatalist policy in Turkey. The commission recommended that women should not be deprived of the opportunity to use effective but unharmful contraceptive devices and drugs. In 1959, the dean of the School of Public Health in Ankara, in his report to the Ministry of Health stated:

> Our School, as a health measure, deems it absolutely necessary that the legal provisions prohibiting the dissemination of knowledge among husband and wife on methods and techniques of preventing pregnancy, and also the prohibiting of such preventive practices be repealed. This is absolutely necessary from the standpoint of mother and child health. The repeal of these articles will enable the pursuit of a population policy more fitting to our economic development and will greatly contribute to a rapid increase of the standard of living of our country . . . .

The problem of introducing radical changes in Turkey's traditional population policy was tackled seriously by the Ministry of Health after 1960. The first official document of the government indicating the change in the population policy is the First Five-Year Development Plan. The promulgation of the Population Planning Law in 1965 laid down the essentials for the implementation of an antinatalist policy for Turkey: (1) Individuals may have as many children as they wish whenever they wish. Desired spacing can be ensured through measures taken to prevent pregnancy. However, castration, sterilization and abortion should not be undertaken unless medical necessities require it. (2) Laws prohibiting the spread of knowledge about contraceptives and the import and sale of contraceptives should be repealed. (3) The government should carry out educational programs in order to disseminate knowledge about contraception and to motivate the people to use birth control.[62]

The third stage of policy development is the post-1965 period in which the government has followed an active population control program.

Migration policy: The freedom of travel and choice of job and place of work either within the country or abroad is a constitutional right of Turkish citizens. Therefore the migration policy of the government is limited to taking social and economic measures in order to influence the migration rate

and distribution of the population.

The objectives and principal measures of the urbanization and resettlement policy in the Second Five-Year Development Plan are as follows:

> Urbanization will be supported and use will be made of urbanization as a tool of development.
>
> The increase in the number of communities in the intermediary stage between cities and villages should be avoided. The most appropriate urban centers--especially large cities--should be supported so that urbanization will have the form of real urban environment.
>
> Economic and social decisions to be made during the Second Plan period will be conducive to the realization of urbanization and balanced growth.
>
> Regional settlement plans will be prepared to help the systematic expansion of regional economic and social activities, to realize economy in the distribution of infrastructure investments and services and to assist the development of industries. These plans will guide the activities of the private sector and regulate urban resettlement.[63]

Immigration to Turkey is restricted mostly to Turks living in the countries which were a part of the former Turkish Empire. The employment of foreign workers, except scientists and experts, is prohibited by law.

Practically no restrictions are placed on emigration even for scientists and qualified workers, although the "brain drain" is an important problem for Turkey. In fact, labor migration to other countries is encouraged by the government in order to ease the pressure of unemployment and to obtain hard currency.

Program base for policy formulation

Fertility and KAP studies: Three major studies on fertility and knowledge, attitude and practice (KAP) in family planning have been executed: the Turkish Demographic Survey and the 1963 and 1968 KAP studies.

The 1963 KAP study was carried out by the School of Public Health of the Ministry of Health with the collaboration of the Research and Test Bureau of the Ministry of Education and the Population Council. Its results were published by Berelson.[64]

The Turkish Demographic Survey was carried out by the School of Public Health between 1965 and 1968.[65] Vital statistics based on the data collected in 1966 and 1967 in this survey have been published. The sampling survey is continuous and aims to study birth, death and migration. From 13 strata, 4,900 households were sampled. The data collected in this survey on the number of births and deaths together with the demographic characteristics of the persons are the only reliable sources for Turkey as a whole.

The 1968 Sampling Survey on Family Structure and Population Problems was carried out by the Hacettepe Institute of Population Studies. Four questionnaires were used in the survey: household, women's, men's and village questionnaires. The designed sample size was 5,375 dwelling units; samples were taken independently from 13 strata and 83 percent of the household interviews were completed. In the households, 3,576 eligible women, that is, married women from 15 to 44 years of age, were found. Of these, 86 percent were interviewed.[66]

The ideal number of children was found to be 3.18 on the average in the 1963 survey and 3.24 in the 1968 survey.

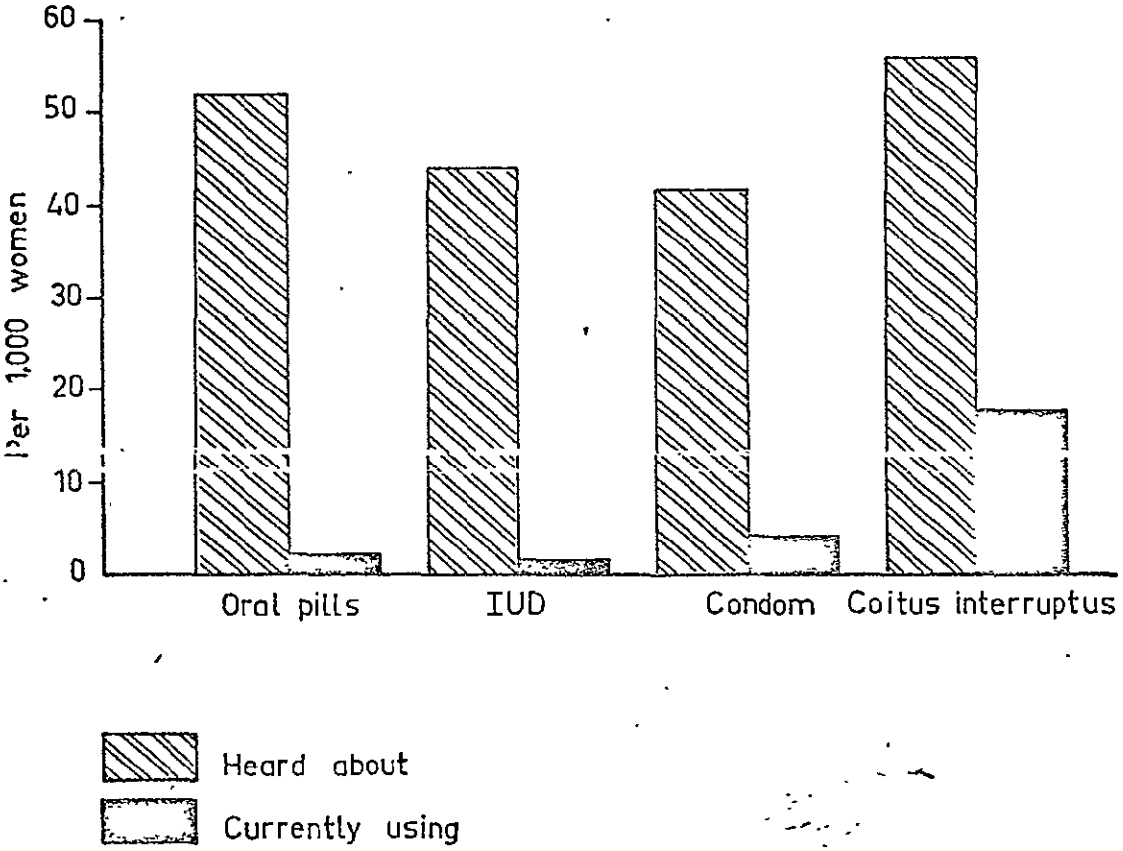
The average number of desired and expected children did not change between 1963 and 1968. The figures for rural and urban areas in 1968 are as follows:

Area	Desired Number of Children	Expected Number of Children
Metropolitan	2.28	3.26
Other urban	2.81	4.47
Rural	3.42	5.12
All Turkey	3.11	4.67

The difference between expected and desired number of children was higher in rural areas and among uneducated women than in urban areas and educated women.

As Figure 16 shows, although knowledge of modern contraceptive methods is being disseminated quite rapidly, coitus interruptus is still the most widely acknowledged method (18 percent).[67] The rates of oral pill and IUD

Figure 16: Knowledge about and Practice of Contraceptive Methods, 1968


60
50
40
30
20
10
0
Per 1,000 women
Oral pills
IUD
Condom
Coitus interruptus
Heard about
Currently using

adopters, which are 2.2 percent and 1.6 percent, respectively, are much lower than the rate of coitus interruptus, lower even than the rate of condom use reported by 4.4 percent of the married women of reproductive age.

According to the results of the 1968 survey, almost one third of the couples which included women of reproductive age used one of the contraceptive methods (Figure 17).[68] The use of contraceptive methods in families varies according to different social and economic conditions. The most important factors affecting the practice of birth control are urbanization and education. The rates of use are 193 and 671 per thousand women of reproductive age in rural and metropolitan areas, respectively. The rate of contraceptive users is negatively correlated with the birth rate and positively correlated with the abortion rate. The rate of contraceptive users is 3.2 times higher among women having had at least junior high school education than among uneducated women, as Table 24 shows.

The choice of contraceptive method also differs according to place of residence and education. The use of condoms increases and the use of withdrawal decreases as the educational level of the women increases. The method of choice among modern methods of contraception for educated women is the oral pill, while uneducated women prefer the IUD.

The rates of condom and oral pill use are higher in urban areas as compared with rural areas, whereas the rates of coitus interruptus and IUD use are lower in urban areas as compared to rural areas.

Abortion: Until the year 1965, abortion for any reason was illegal in Turkey. Related articles of the Turkish penal code imposed severe charges upon those who either performed or had abortions. However, judicial inquiries and prosecutions were rare and limited in cases where abortion attempts did not result in death, because the Turkish penal code permits all forms of intervention, even though illegal, if intended to save a life. Since doctors

Figure 17: Family Planning Practice, 1968

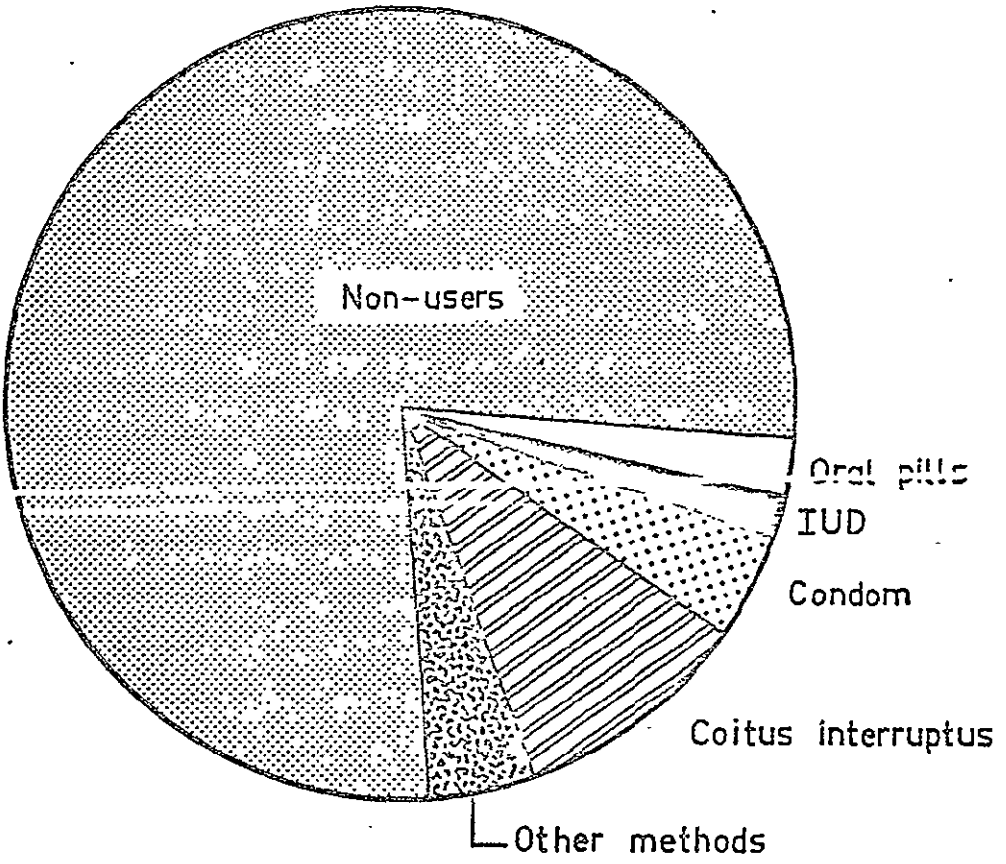

Non-users
Oral pills
IUD
Condom
Coitus interruptus
Other methods

Table 24

Family Planning Practice According to Place of Residence and Educational Level Per 1000 Married Women of Reproductive Age

Education of Women	Metropols	Cities	Towns	Rural	All Turkey
No schooling	546	355	251	177	223
Attended primary school	645	571	430	192	394
Completed primary education	736	631	602	336	546
Completed junior high school or over	744	634	6	-	752
Total	671	741	373	193	312

Source: Documentation Center, Hacettepe Institute of Population Studies.

performing medical abortions did so, or allegedly did so, in order to save the life of the mother, no charges were pressed against them. The Family Planning Act, promulgated in 1965, legalizes abortion under conditions in which there is a possibility that the child may be born crippled or when the life of the expectant mother is in danger. A regulation published as a supplement to that law gives a comprehensive list of the diseases and ailments that might threaten the mother's life or that might cause the child to be crippled. Psychosis is among the illnesses for which abortion is permitted.

Abortion plays an important role in averting birth. The positive correlation between abortion and the rate of contraceptive adopters indicates that abortion is used primarily to correct failure of contraceptive methods.

The relationships between birth, abortion and contraceptive use are shown in Figure 8. The abortion rate also increases as the level of education increases. Since Turkey is rapidly becoming urbanized and since the level of education is increasing, it may be anticipated that abortion will play a more important role in family planning in the future if the use of effective methods of contraception is not successfully propagated.

The move to legalize abortion on social grounds is also developing. In a survey in 1969, it was found that 69 percent of the doctors were in favor of abortion on social grounds.[69] In 1971, the Superior Council of Health, considering the upward trend in self-induced abortion and its health implications, recommended that the government take steps to change the law concerning abortion and allow medically induced abortions on the basis of social indications.

Attitude of intellectuals: The majority of the intellectuals support the family planning program. Those who were indoctrinated with the pronatalist policy between 1920 and 1960 and who are not able to see the changing situation oppose family planning. The factors influencing the attitudes of the latter are nationalism, pride in numbers, hopes for the beneficial effects of population pressure and mostly ignorance of subjects and fields not within

their professional training.[70]

In 1968, Yeşilçay, who studied the attitudes of medical doctors, found that the great majority of them were in favor of family planning, obstetricians more so than other doctors. Eighty percent of the medical doctors who answered Yeşilçay's questionnaire approved of the government program for family planning and 69 percent of the medical doctors were definitely against a pronatalist policy. Those who were strongly against family planning on all accounts constituted only 5.2 percent of the doctors who responded.[71]

The attitudes of religious leaders in Turkey differ, a result of the lack of a central religious authority in Islam. The High Advisory Council of Religious Matters expressed its view in favor of contraception without discriminating against any method. But the Fatwa states that abortion is permitted only in cases in which the life of the mother is in danger.[72] In spite of the favorable attitide of the council, many imams are against family planning and preach against the use of contraception. However, their views have limited effect on public opinion because women not using contraceptives because of religious considerations are only five percent of all married women of reproductive age. An additional factor is that opposition is less pronounced in the case of the use of contraceptives than in the case of supporting propaganda for limiting the number of children.

Programs for family planning

National program: The objectives and targets of the national family planning program are formulated in the Second Five-Year Development Plan (1972-77) as follows:

(i) Family planning programs will be conducted to safeguard the health of mothers and children, to improve the structure of the population and to alleviate the pressure of population growth on economic development.

(ii) The State will provide information on contraception and assistance in the form of medication and contraceptive devices to those who are against having more than a certain number of children but who, because of ignorance

(iii) Work related to family planning will be carried on in the form of mass education and medical guidance and such work will be extended to the smallest communities in the country.[73]

The target will be to make family planning programs available each year to five percent of the women of childbearing age. By 1972, about two million women will have benefited from this service.

As use is already made of the health installations and health centers located in provincial and township centers, investments for family planning cover expenditures for research and the organization of travelling teams. By comparison with international figures, family planning expenditures per capita have been estimated at 0.5 T.L. Accordingly, total expenditures are expected to rise from 15 million T.L. in 1968 to 17 million T.L. in 1972.[74]

The national program is operated and coordinated by the General Directorate of Family Planning which is one of the 16 general directorates of the Ministry of Health.

In 1971, 287 out of 632 urban centers had permanent family planning clinics. The total number of clinics is 506.[75]

Five mobile teams operate in rural areas. Each team has two vehicles, a male and female educator, a midwife and a doctor. First, two educators visit the villages; then the doctor and midwife go to these villages on the following day to provide family planning services. According to a loan agreement between the Turkish government and AID, 528 cars will be used to organize new teams.[76]

Personnel who are employed for family planning are divided into two groups: full-time and part-time. The numbers of full-time physicians and nonprofessional personnel are 75 and 65, respectively. Part-time personnel carry out family planning services in addition to their main responsibilities, and they may not give priority to family planning services. They are supervised by their

general directors, and the Director General of family planning has no authority over them. In 1971, the number of part-time doctors employed in the family planning program by the Ministry of Health was 5,001. Approximately another 500 doctors not employed by the Ministry of Health are authorized to insert IUDs.

Postpartum programs in maternity hospitals have not been developed because of the lack of staff in provincial hospitals. The pilot project which was started in the Ankara Maternity Hospital with the collaboration of the Population Council was very successful.

Methods of contraception recommended by the national program are the oral pills, IUDs, condoms and vaginal tablets. According to the statistics of the clinics and the mobile teams, there are more IUD insertions than evidence of the practice of other methods. The total number of IUD insertions since the beginning of the program in 1965 has been over 300,000.[77] The number of yearly insertions has been around 53,000 during the last five years. The total number of oral pills distributed free of charge in the clinics has been 141,000 cycles since 1968. The estimated number of the sale of oral pills in pharmacies is around 100,000 cycles per month. The price of one cycle of an oral pill preparation is about 9.50 T.L. (68 U.S. cents). According to regulations, oral pills are to be sold on a prescription basis; in fact, they are available on demand in pharmacies. In 1968 and 1969, 1.9 million vaginal tablets were distributed free of charge.

The direct budgetary allocation for family planning, which does not include the expenses of permanent clinics and the educational activities integrated with other programs, increased from 4.8 million T.L. in 1965 to 18.2 million T.L. in 1971. In 1971, the fund which was allocated exclusively for family planning was 0.1 percent of the budget of the Ministry of Health and 0.05 percent of the national budget.[78]

Educational activities are carried out primarily as a part of the general

health education program. Fifteen health exhibition centers, 69 mobile movie teams and 109 health educators of the Ministry of Health take part in family planning education. The staff of the local health units, especially midwives, also play an important role in the education of the public.

Attempts to reach the people through the media are being increased. Posters, pamphlets and news bulletins are distributed by the Ministry of Health to educate the public as well. Two educational films on family planning have been shown in theaters throughout the country. Radio programs and spots are also used to educate the public, and a new TV program is being developed. The Ministry of Education, in collaboration with the World Education Association, is studying to develop a book for use in literacy programs.

Voluntary efforts: Three voluntary organizations participate in the family planning effort.

The Turkish Family Planning Association, which was founded in 1963 and is an affiliate of the International Planned Parenthood Federation, is one of these associations. In 1971, it had 21 provincial branches. Its main activity is education of the public by organization of conferences, seminars and lectures and distribution of pamphlets and posters. In addition to this educational activity, the association also operates a few clinics. Its budget was 684,827 T.L. in 1970. Most of its receipts come from the International Planned Parenthood Federation; the remainder is collected from patient fees and grants from the Turkish government.[79]

The Turkish Development Fund is interested essentially in the community development of rural areas and has concentrated its activities in the provinces of Adana and Mersin. It has been interested in family planning since 1969 and runs a pilot project in the district of Tarsus. The objectives of the Tarsus project are not only to serve the people, but also to find the most efficient administrative approach for extended family planning services in the future.

The main activity of the family planning committee of the University Women's Association is education. The efforts are limited to large cities and nearby villages. The committee also mobilizes the voluntary assistance of doctors for the insertion of IUDs following their educational programs.

Educational and scientific efforts: The main institutions for population research and demographic studies are the State Institute of Statistics, the Institute of Population Studies of Hacettepe University, the School of Public Health of the Ministry of Health and the Unit of Demographic Research of the State Planning Organization.

The State Institute of Statistics, founded in 1926, conducts a general population census every five years.

The objectives of the Institute of Population Studies of Hacettepe University, which was established in 1967, are to provide both research work and postgraduate training in population dynamics. The major field study of the institute was the 1968 Survey on Family Structure and Population Problems. In addition to this work, every year one or two small-scale field studies are carried out. The institute plans a new nationwide KAP study in 1973, parallel to the one carried out in 1968.[80] The Etimsgut Health District, with a population of close to 60,000, originally a teaching center for Hacettepe University medical students, also serves the institute as a population laboratory. Nineteen graduate students were trained and received the master's degree by 1971.

The School of Public Health has made two major contributions to knowledge on population problems in Turkey: the 1963 KAP study which was carried out with the collaboration of the Population Council and the Turkish Demographic Survey.

The Demographic Research Unit of the State Planning Organization is responsible for collecting and evaluating demographic information for planning purposes.

The curricula of the medical schools and the schools of paramedical personnel include subjects on family planning. In order to give more comprehensive training in family planning and population problems, improvement of most of these curricula is still needed.[81]

Foreign assistance: The Turkish government received its first technical assistance for the family planning program from the Population Council. In addition to technical assistance, the Population Council granted a total of $1,834,580 between 1964 and 1970 for various projects.

The International Planned Parenthood Federation has supported the activities of Turkish family planning since 1964. Total grants from the federation amounted to 77,000 English pounds in 1971.

AID granted 577,000 T.L. to support the family planning program and gave a loan to the Turkish government amounting to 2.7 million dollars for the purchase of 528 cars for use in the family planning programs. It also spent $177,500 for other family planning programs in Turkey.[82]

The Swedish International Development Authority has given oral pills, vaginal tablets, condoms and motor vehicles for use in the program and a printing machine for printing educational material. The value of these items is around $195,000.

Grants from foundations and private organizations such as the Ford Foundation, the Rockefeller Foundation, the Pathfinder Fund and CARE have amounted to one million dollars. The receiving institutions were the Institute of Population Studies and the Medical School of Hacettepe University and the Turkish Development Fund.

Achievements to date, special issues and prospects in family planning

The most important achievements of the government in the field of family planning were changing the deep-rooted pronatalist policy and making contraceptive devices and drugs available on the market. Both the Population

Planning Law and the five-year development plan require the government to work to lower the birth rate, but the efforts of the government are not extensive enough and always lag behind public demand.

The allocation of funds by the Parliament to the family planning program every year indicates that the government and the majority of Parliament members are in favor of family planning programs. But the slow development of the program indicates that both the government and Parliament members do not regard family planning as a program having high priority for Turkey. The following facts justify the above conclusion: During the last five years, five mobile teams have been organized for 35,000 villages and only 45 percent of the cities and towns have had clinics giving family planning services to the public besides caring for other obstetrical and gynecological cases or doing maternal and child health work. A policy formulated in the Family Planning Law for the selling of contraceptives such as oral pills and condoms at a low price has not yet been realized. The Family Planning Law also requires the participation of the Ministry of Education and the armed forces in the education of the public. These activities are still in the planning phase at present.

Contrary to the situation in some other developing countries, the public side of the matter is encouraging. The great majority of the families in Turkey have already accepted small family norms. Therefore the main problem is not motivating couples for family planning; instead, it is convincing them to use more efficient methods instead of coitus interruptus and the douche and having the needed services available for their use. According to the results of the 1968 survey, one third of the pregnancy cases were among women who used one or another method of contraception. If these women had been successful in preventing their pregnancies, the number of births averted would have been around 300,000. Accordingly, the birth rate would have dropped from 40 births per thousand population to 26 per thousand. This means that population planning would have surpassed its initial target and rapid

population growth would have been solved at the macro level in Turkey.

What are the prospects for family planning in Turkey? Two factors must be considered in order to predict the future development of family planning programs. The first and main factor is the betterment of the social and economic status of couples. It is known that socioeconomic factors such as urbanization and the increase of the level of education and income lower the fertility level. Since Turkey is becoming urbanized rapidly and the level of education and income is increasing steadily, the birth rate should decrease in the coming decades. In fact, a low fertility area has already established itself in the western part of the country where the socioeconomic level is higher than elsewhere.[83]

The second factor is government action. An active and efficient government program both for educating the public and for offering family planning services to couples accelerates the transition from a high fertility to a low fertility level if socioeconomic conditions are favorable. It is difficult to predict the direction of government activities in the future. If the government decides to carry out family planning more extensively, the major problems will be the proper utilization of available manpower, the training of administrators and managerial staff and the creation of team spirit among staff and between staff and administrator.

REFERENCES

1. H. Inandık and E. Tümertekin, Geography III (in Turkish; Remsi Kitabevi, 1956).

2. U. E. Çölaşan, Climate of Turkey (in Turkish; Ankara: T. C. Ziraat Bankasi Matbaasi, 1960).

3. Temporary Results of the 1970 Population Census (in Turkish; State Institute of Statistics, Publication No. 616).

4. T. Y. Öztuna, Turkish History (Hayat Yayınları, A. Ş., 1965).

5. J. P. D. Kinross, Atatürk, Rebirth of a Nation (London: Weidenfeld and Nicolson, 1964).

6. B. Berelson, "Turkey: National Survey on Population," Studies in Family Planning, No. 5 (1964); T. Bulutay, S. Timur and H. Ersel, Income Distribution in Turkey (in Turkish; Siyasal Bilgiler Fakültesi, Publication No. 325).

7. State Institute of Statistics, Publication No. 632 and Official Gazette, No. 14058.

8. National Income, Total Expenditure and Investments of Turkey, 1938, 1948-1970 (State Institute of Statistics, Publication No. 625).

9. Ibid. and The Second Five Year Development Plan (1968-1972) (Publication No. 752; Ankara: Republic of Turkey, Prime Ministry, State Planning Organization, 1969).

10. National Income.

11. Ibid.

12. T. Bulutay et al.

13. Y. Hamurdan, Proceedings of the Fifth National Labor Conference (Ankara: 1971).

14. 1965 Population Census (State Institute of Statistics, Publication No. 508).

15. Education Statistics, 1970-71 (in Turkish; State Institute of Statistics, Publication No. 635).

16. Statistical Yearbook of Turkey, 1968 (in Turkish; State Institute of Statistics, Publication No. 580); unpublished data (State Institute of Statistics).

17. Temporary Results of the 1970 Population Census; 1945 Census Results (in Turkish; State Institute of Statistics, Publication No. 287); 1965 Population Census (in Turkish; State Institute of Statistics, Publication No. 568); 1945 Population Census (in Turkish; State Institute of Statistics, Publication No. 286); 1950 Population Census (in Turkish; State Institute of Statistics, Publication No. 359); 1950 Population Census (in Turkish; State Institute of Statistics, Publication No. 410); 1960 Population Census (in Turkish; State Institute of Statistics, Publication No. 468) and 1965 Population Census (in Turkish; State Institute of Statistics, Publication No. 537).

18. 1965 Population Census.

19. Unpublished data (State Institute of Statistics).

20. F. C. Shorter, "Estimate of Crude Birth Rates in 67 Provinces, 1955-1965," Population News Bulletin, Vol. 3 (1971), p. 3.

21. Y. Heperkan et al., Vital Statistics from the Turkish Demographic Survey, 1966-67 (Hacettepe Press, 1970).

22. Ibid.

23. Temporary Results of the 1970 Population Census; 1945 Population Census; 1960 Population Census; 1935 Population Census (in Turkish; State Institute of Statistics, Publication No. 74) and 1965 Population Census.

24. Unpublished data (State Institute of Statistics).

25. Deaths in Province and District Centers, 1960 (in Turkish; State Institute of Statistics, Publication No. 423); Deaths in Province and District Centers, 1965 (in Turkish; State Institute of Statistics, Publication No. 553; 1965 Population Census and 1960 Population Census.

26. Y. Heperkan et al.

27. N. H. Fişek, "An Epidemiological Study on Abortion in Turkey," paper presented at the International Planned Parenthood Federation Conference on Induced Abortion: A Hazard to Public Health (Beirut, February 1971).

28. E. Tümertekin, Internal Migration in Turkey (Istanbul University Institute of Geography, Publication No. 54; Istanbul, 1968).

29. G. Karahasanoğlu, "Some Aspects of Internal Migration Patterns in Turkey 1950-1965" (Master's thesis, Hacettepe Institute of Population Studies, 1971).

30. F.C. Shorter, The Demography of Turkey (unpublished manuscript, 1972).

31. Ibid.

32. Minister of Labor, personal communication.

33. S. Timur, Family Structure in Turkey (in Turkish; Hacettepe University Publication No. O-15, 1972).

34. Divorce Statistics and Marriage Statistics 1969-1970 (State Institute of Statistics, Publication No. 633).

35. S. Timur.

36. F. Karadayı, "Socio-Economic Correlates of Fertility Behavior and Attitudes in Turkey" (Master's thesis, Hacettepe Institute of Population Studies, 1971).

37. 1972 Budget Report of the Ministry of Health.

38. Activities of the General Directorate of Tuberculosis Control 1969-1970 (in Turkish; Ankara: Ministry of Health, 1971).

39. 1972 Budget Report of the Ministry of Health.

40. 40 Years in the Health Services, 1922-1962 (in Turkish; Ministry of Health Publication No. 303).

41. 1972 Budget Report of the Ministry of Health.

42. Reports of Communicable Diseases (Archives of the Ministry of Health).

43. Unpublished data (Ministry of Health).

44. First Five Year Development Plan (1963-1967) (Ankara; Turkish Prime Ministry State Planning Organization, 1963).

45. Guide (Ankara: Turkish Republic State Organization, 1963).

46. Laws Regarding the Organization and the Personnel of the Ministry of Health (Official Gazette, No. 3337).

47. N. H. Fişek, "Health Planning in Turkey as an Example for Planning in Developing Countries," Ann. Soc. belge Med. trop., 48 (1968), p. 381.

48. An Account of the Activities of the Etimesgut Rural Health District, 1967, 1968 and 1969 (Ankara: Hacettepe University, 1970).

49. Education Statistics, 1970-71.

50. Hacettepe University Bulletin, 1969-1970 (Hacettepe Press, 1970) and I. Doğramacı, "A New System of Medical Education in Turkey," Journal of Medical Education, Vol. 41 (1966), p. 1063.

51. Unpublished data (Ministry of Health).

52. Ibid.

53. Unpublished data (State Institute of Statistics).

54. Unpublished data (Ministry of Health).

55. Ibid.

56. C. E. Taylor, R. Dirican and K. W. Deuschle, Health Manpower Planning in Turkey (Baltimore: The Johns Hopkins Press, 1968).

57. 1972 Budget Report of the Ministry of Health.

58. Ibid.

59. First Five Year Development Plan (1963-1967).

60. 1972 Budget Report of the Ministry of Health.

61. Social Insurance Administration, personal communication.

62. Law Concerning Population Planning (Official Gazette, No. 11976).

63. The Second Five Year Development Plan, 1968-1972 (Publication No. 752; Ankara: Republic of Turkey, Prime Ministry, State Planning Organization, 1969).

64. B. Berelson, "Turkey: National Survey on Population," Studies in Family Planning, No. 5 (December 1964).

65. Y. Heperkan et al.

66. Techniques of the 1968 Survey on Family Structure and Population Problems (Hacettepe University Publication No. D-9).

67. F. Özbay and F. C. Shorter, "Turkey: Changes in Birth Control Practices, 1963-1968," Studies in Family Planning, No. 51 (March 1970).

68. 1968 Survey on Family Structure and Population Problems (unpublished data, Hacettepe Institute of Population Studies Documentation Center).

69. N. H. Fişek, "Problems in Starting A Program," in Family Planning and Population Programs (Chicago: The University of Chicago Press, 1966).

70. Ibid.

71. S. Yeşilçay, Attitudes of the Medical Profession Towards Family Planning in Turkey (in Turkish; unpublished manuscript, Hacettepe Institute of Population Studies, 1969).

72. R. Üner and N. H. Fişek, Family Planning in Turkey (in Turkish; Ministry of Health Publication No. 264; Ankara, 1961).

73. The Second Five Year Development Plan (1968-1972).

74. Ibid.

75. Unpublished data (Ministry of Health).

76. Minister of Health, personal communication.

77. Ibid.

78. 1972 Budget Report of the Ministry of Health.

79. Annual Report of the Turkish Family Planning Association (Ankara, 1970).

80. The Fourth Annual Report of the Hacettepe Institute of Population Studies (Ankara, 1972).

81. Teaching Family Planning (New York: Josiah Macy, Jr. Foundation, 1969).

82. Minister of Health, personal communication.

83. N. H. Fişek, "Prospects for Fertility Planning in Turkey," in S. Behrman, L. Corsa, Jr. and R. Freedman, eds., Fertility and Family Planning: A World View (Ann Arbor: The University of Michigan Press, 1969).